FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Layer Numbers April 1 Off 2% From Year Earlier

WASHINGTON — Layers on April 1, 1961, totaled 292,157,000, a decrease of 2% from a year earlier, reports the U.S. Department of Agriculture.

Layer numbers, compared with last year, were down 7% in the east north central, 6% in the west north central, 4% in the north Atlantic, and 2% in the south central regions. Increases were 7% in the West and 4% in the south Atlantic states (see accompanying table).

The rate of lay on April 1, 1961, was 63.2 eggs per 100 layers, compared with 60.6 eggs a year earlier. All regions were above last year except the West, which was down 2%. Increases were 7% in the west north central, 6% each in the east north central and south central, 5% in the south Atlantic, and 3% in the north Atlantic states.

Producers received an average of

(Turn to LAYERS, page 103)

Broiler Egg Set Up 22% from Year Ago

SALISBURY, MD. — Hatcherymen across the nation haven't slacked up yet. Last week the broiler egg set was 61,912,000.

This was slightly above the previous week and 22% above the corresponding week a year ago. Settings were up from the previous week in 10 of the 22 states. States for which sizeable increases were reported include Arkansas, Washington and Indiana. Settings in Delmarva were 1% below the previous week but 16%

(Turn to EGG SET, page 103)

BROILER PRICES BREAK TO LOWEST SINCE 1959

ATLANTA — The broiler market broke downward to the lowest point since 1959, the U.S. Department of Agriculture said April 13. The low price quoted was 14¢ lb.

The previous day the price was at 14.5-15¢ at farms, but prices had been ranging around 15¢ for several days.

Demand has been fair to good, the department said, and "very competitive." Further, the department April 12 said the market had a "nervous undertone."

Estimated slaughter April 12 was 1,069,000 head as compared with 751,000 the same day a week previous.

Over-Production of Broilers Rings Alarm in Industry

By ROBERT H. BROWN
Special Correspondent

ATLANTA — The current broiler situation is such that it may be "viewed with alarm" and extreme caution should be used in future placements, the broiler commodity committee of the Southeastern Poultry & Egg Assn. urged following its meeting here April 7.

The industry needs to adjust production and to institute a heavy breeder culling program which would take out of the market inferior grades, the group concluded.

The production issue was considered of such prime importance at this time that the committee devoted the biggest portion of its session to this issue. Usually this committee meets for the purpose of making recommendations for future activities of the association and also to review industry problems.

Production Still Climbing

It was pointed out that while export markets are beginning to open up and school lunchrooms are now feeding government-purchased chicken, the production is still climbing and that new broiler houses are being built throughout the South.

Part of the good export market news received during the week was that West Germany had announced removal of most restrictions on poultry imports.

The Federal Republic of Germany is this country's largest foreign customer, according to Harold Ford, SEPEA executive secretary, and removal of restrictions should boost sales. He pointed out that West Germany purchased only 150,000 lb. in 1955, while the 1960 figure was more than 100 million pounds.

Mr. Ford recently assumed the position of co-chairman of the international trade development committee's trade barrier group. It is part of his job to stimulate exports of both broilers and eggs.

Expresses Alarm

The commodity committee expressed alarm at the number of new houses going up in nearly all southeastern states, even though it has been evident for a number of months that the market was nearing a peak.

The committee also voiced the opinion that though placements are at record levels at present, the peak

(Turn to BROILERS, page 103)

USDA Outlines Policy to Govern Payments to Participating Producers

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The U.S. Department of Agriculture this week issued an explanation of plans for payments to farmers participating in the new feed grain program.

The report confirmed information previously published in Feedstuffs.

USDA said that corn and grain sorghum producers participating in the 1961 program will obtain price support on those crops and on oats, barley and rye. Producers of oats, barley and rye who did not produce corn or sorghums in the 1959-60 period will be eligible for the new higher support for these commodities. However, corn and sorghum producers who fail to comply with the acreage reductions of the new feed grain bill will not be eligible for support prices for any oats, barley or rye they may raise.

It must be understood that the feed grain bill is a bushelage production measure. Corn or sorghum producers diverting acreage will be entitled to a bushelage payment equal to their 1959-60 average yield per acre times the support price as determined by the ASC committees.

There will be no limits on oats, barley or rye.

It may be significant that determinations by ASC committees may be a factor in this program. The new administration has been working overtime to fire all ASC committee members with GOP affiliations and to appoint Democratic farmers to the committees. There is nothing unholy in this—both parties do it—but at this time it can mean that in the USDA drive to sign up corn and sorghum farmers, a complier might gain some preference with his local committee as to not only yield per acre but also his planted acreage in the 1959-60 base period.

Payments

USDA said in its press release this week that "as a measure to get income in farmers' hands now, up to half of the estimated total payment for a farm will be offered to producers as soon as they sign up under the program. Payments will be in the form of negotiable certificates for

(Turn to PAYMENTS, page 99)

Reduction in Feed Grain Acreage Seen; Grain Plan May Cause Further Cut

WASHINGTON—Prospective participation by producers in the government's new "emergency" feed grain program ranks with the weather as a point of speculation in forecasting 1961 feed grain supplies.

The U.S. Department of Agriculture pointed out this week in its April feed situation analysis that on March 1 farmers planned a small reduction in their 1961 feed grain acreage — down about 1.5 million acres from 1960 to 145 million. Such intentions would mean the smallest feed grain acreage since 1953.

This reduction could be even greater—if the extent of participation in the feed grain program is large. USDA's March 1 intention survey was made 22 days before the program was signed into law by President Kennedy, and the March 1 plans of farmers probably were not greatly influenced by the impending legislation. It is conceded that extensive participation would result in more substantial acreage reductions in corn and grain sorghum than farmers indicated March 1.

Deadline Approaching

A deadline for participation sign-up had not yet been set at week's end, but farmers were being told that it probably will be about mid-May.

Meanwhile, feed men as well as the farmers themselves and USDA officials are attempting to predict compliance. Feed industry guesses have ranged from as low as 25%

(Turn to ACREAGE, page 99)

Broiler Prices Still Slipping; Egg Mart Varies by Regions

NEW YORK — Broiler prices slipped further this week and egg prices were reported lower in the Northeast, but higher in the Midwest.

The U.S. Department of Agriculture's poultry price review for the week ended April 12 says live broiler prices declined ½-1¢ in the southern growing areas during the period, and at the close an unsettled undertone existed with farm prices mostly 14½¢ in Georgia, Alabama and North Carolina, and mostly 14¢ in Mississippi and Arkansas. In Delmarva, prices averaged approximately two thirds of a cent lower than a week earlier, and most sales ranged between 15 and 15.7¢.

Egg prices, USDA says, declined as much as 2¢ in the Northeast and advanced as much as 2¢ in the Midwest. Supplies in the Northeast were said to be excessive in large eggs and light to adequate in mediums and smalls. In the Midwest, buying interest was highlighted by increased breaking activity.

Light trading in frozen ready-to-cook turkeys was reported. Demand was generally termed seasonally fair and mostly for institutional stocks. In terminal markets, turkey prices reflected a slightly weaker market as they trended unchanged to 2¢ lower.

FEEDSTUFFS *Features This Week*

HIGH TONNAGE—An Indiana organization achieves a high feed tonnage through broiler and turkey contracts. **Page 18.**

FEWER BUT LARGER—Analyses of the Census of Agriculture confirm what feed men knew about fewer but larger farms. **Page 28.**

GRANITE GRIT—The relative role of granite grit in rearing replacement pullets and in feeding laying hens is discussed on **page 32.**

EGG PROJECT—A grocery wholesaler and a feed firm have a Tennessee egg project under way. **Page 56.**

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EDITORIAL STAFF—George L. Gates, Editor; Roger Bergland, Managing Editor; Fred E. Tunks, News Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; James K. Rutter, Russell Tokheim and Paul B. Crockett, Editorial Assistants.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

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ABC AUDITED PAID CIRCULATION — NDP

The regional circulation of this issue is concentrated in the northeastern states

Top of the Hopper

THE NATIONAL FARMERS ORGANIZATION has been getting considerable attention recently with its attempt to bolster prices by having members withhold shipments of livestock to market. The success of the effort is widely doubted by farm economists, and the wisdom of the move is seriously questioned in other quarters, too. One midwestern swine expert was asked by a reporter what sort of a ration he would recommend for hogs being held back by the NFO maneuver. He replied that he didn't have any recommendations and that the idea was haywire since farmers would stand to lose both because of high relative costs of feeding animals already at market weight and because of the lower price they would likely get for overweight carcasses.

HEAVY BUYING OF TALLOW by the Russians is reported to be one of the factors pushing prices of this commodity up recently. Meanwhile, the Russians have slipped a man into space while the U.S. was caught with its astronauts down on the ground. The Reds perhaps have found a way to build a better candle to get their rockets up, or maybe they merely have been doing a more thorough job of greasing the launching skids.

GEORGE LARRICK, Food and Drug commissioner, told members of the Grain & Feed Dealers National Assn. that FDA would just as soon turn the whole job of regulating feeds back to the state feed control officials if the states had the equipment to do the job. Years ago, he noted, the main objective of feed control was seeing that feed met tag guarantees. This state control officials accomplished very well, individually and through Association of American Feed Control Officials' cooperation. The record shows, too, that the feed industry also worked to make control effective, he added. However, he went on, the marked change in the character of animal feeds in more recent years caused them to be classified as drugs, which led to the requirement for new drug applications and ultimately the food additives legislation when FDA became concerned with safety of drugs for animals and the question of residues in animal tissues. State control facilities, he indicated, are not presently set up to regulate what FDA presently is required to regulate.

MARKETING TRENDS CHANGE, Don Turnbull of the National Egg Council pointed out the other day. And he mentioned an interesting example of change. "If you had told me three years ago that there would be a demand for brown-shelled eggs in southern California," he said, "I'd have called you crazy. California, as anyone knows, is a white shell market, with maybe a few tints here and there. Today, one enterprising large assembler in the Los Angeles area is making a tremendous mark for himself and the producers who supply him with brown-shelled eggs."

PREPARATIONS ARE NOW being made in Japan for establishing a new organization, tentatively named the Japan Feedstuff Assn., under auspices of the Japanese government. The group will be engaged in various public relations and research activities, with funds to be partially provided by the U.S. Feed Grain Council. The organization proposes to obtain research information from the U.S. and other countries and establish a research committee to study production, marketing, price structure, foreign trade, transportation of feed grains and other feed materials. Its aim would be to improve processing, utilization and feeding techniques and promote the consumption of livestock products. Its recommendations include specific plans for developing improved cattle production, also.

(Turn to **TOP OF THE HOPPER**, page 105)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Considering the nation as a whole, formula feed business improved somewhat this week. Reports indicated variations of business trends from region to region, however.

Sliding broiler prices have created deep concern among feed men who depend upon broiler production for the major share of their business. Egg prices moved in both directions this week. Prices declined in the East, but advanced in the Midwest.

From the Corn Belt it was reported that hog and poultry feed business was good. Cattle feed business reportedly was not in this situation because, in spite of a cold spring, under-cover feeding of livestock has dropped.

Some feed men fear that higher formula feed prices caused by sharp gains in ingredient prices, especially for soybean oil meal, may encourage more liberal use of corn for livestock.

The U.S. Department of Agriculture reported that the current wholesale feedstuff price index of 85.2 is 2.7 higher than for the preceding week. A year ago the index was 81.5. The feed-grain index edged up to 59.9 from 59.7 a week earlier, but it was below the year-earlier index of 68.7. This week's hog-corn ratio of 16.9 was slightly higher than last week's 16.4 ratio and a substantial improvement over the 13.5 mark of a year ago. (Feed markets in detail on pages 100-102.)

Northwest

Most feed manufacturers in the Northwest reported business this week was unchanged to better than last week. Chick, turkey and pig starter feeds were moving well for all manufacturers. Beef cattle feed was also moving well for some feed makers.

An $8 increase in the price of soybean meal was pushing manufacturers feed prices up. One manufacturer said that prices on high protein feeds would be $1-2 higher. Another said if the full price advance were to be reflected in feed prices, a $5-6 price increase would be necessary.

Some manufacturers were substituting linseed meal for part of the soybean meal in their cattle and dairy rations. Others said they were strongly considering the move. It was apparent at week's end that this thinking was lifting linseed meal's price.

Northeast

The week-to-week upturn in formula feed sales marked time as demand held at the previous week's level, and is expected to remain on the same plateau next week.

The recent upsurge in soybeans and other proteins is causing a change in the mix pattern from concentrates to more complete feeds.

Mixers using lower-priced ingredients—distillers grains, gluten feed, hominy, etc.—say they can turn out a 16-18-20% feed and keep the use of soybean oil meal at a minimum.

One spokesman said he doesn't know how far the trend will go, but "he would like to see some light on that angle," because it would mean an increase in mixers' tonnage.

Dairy feed demand still is going good, and egg mashes remain a mainstay of the sales turnover. But starting and growing feeds are climbing in volume.

The outlook on end products turned a little dimmer. Broiler prices slipped below the 15¢ lb. level where growers feel the pinch on their profit margins. Egg prices were about unchanged.

Running time of formula feed manufacturers held unchanged at 36 hours last week.

Southeast

Broiler feed business in the Southeast continues to be reported as being very good with mills running time as being about normal. But many manufacturers are complaining that they are having a difficult time in securing certain feed ingredients.

With broiler prices dropping an additional 1¢ lb. this week, making f.o.b. the farm prices 14¢ lb. even some good operators are raising birds at a loss. Many believe prices for chicks will see a further decline.

Formula feeds for dairy cattle and hogs continue on the slow side, and it is reported that there is a surplus of milk in Florida. Dairymen have been asked to cut back on production and many are drying up a good portion of their herds.

South Central

Formula feeds are moving in better volume this week, but the limited increase in business has not been large enough, thus far, to raise the mill operating rate. Most plants are maintaining five-day capacity runs.

Pig and hog feeds are moving quite well and there has been a moderate expansion in chick and turkey starter sales. The weather has been colder and wetter than expected and this may be retarding the chick starter season to some extent. Egg feed demand is only fair, not up to the level of a month ago, and this is due to relatively low egg prices. The broiler feed picture is not encouraging, mainly because of low broiler prices.

Wide gains in vegetable and animal proteins will result in increased formula feed price lists next week, according to reports from manufacturers.

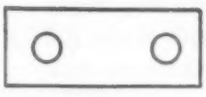
Southern California

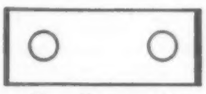
Now that the Easter holiday has passed, local egg markets in this area decreased 3-5¢ doz. this week bringing alarm to some poultrymen. For this reason non-productive hens continue to flood the processors in the Los Angeles area; a condition which traditionally lowers the market value of these birds.

During the week the area has experienced a wide fluctuation in daytime temperatures. This factor alone upset poultry feed demand although this tonnage still ranks far above last year.

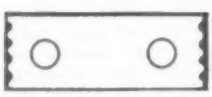
The current broiler problem is twofold. First, overproduction problems keep depressing the market. Second, feed costs have increased somewhat from last week forcing a lower net profit to the grower. Proteins remain extremely strong on the West Coast as soybean meal prices near the $100-ton level. New highs have been established in California this year for the usage and importation of South American fish meal because of the

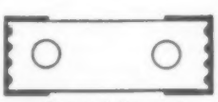
(Turn to **MARKETS**, page 105)

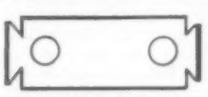

Strap Hammer. Heat treated, not hardfaced.

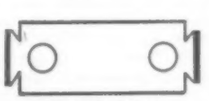

Strap Hammer with hardfaced ends.

Strap Hammer with hardfaced ends and edges.


Serrated Edge Hardface Hammer with hardfaced ends

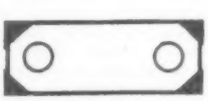

Serrated Hammer with hardfaced ends and edges. 50% more Tungsten-carbide.

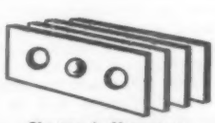

Single Notched Double End Hammer hardened, not hardfaced.


Single Notched Double End Hammer with hardfacing.

Notched Hammer hardened, not hardfaced.

Notched Hammer with hardfaced ends.


Capped Hammer has corners hardfaced.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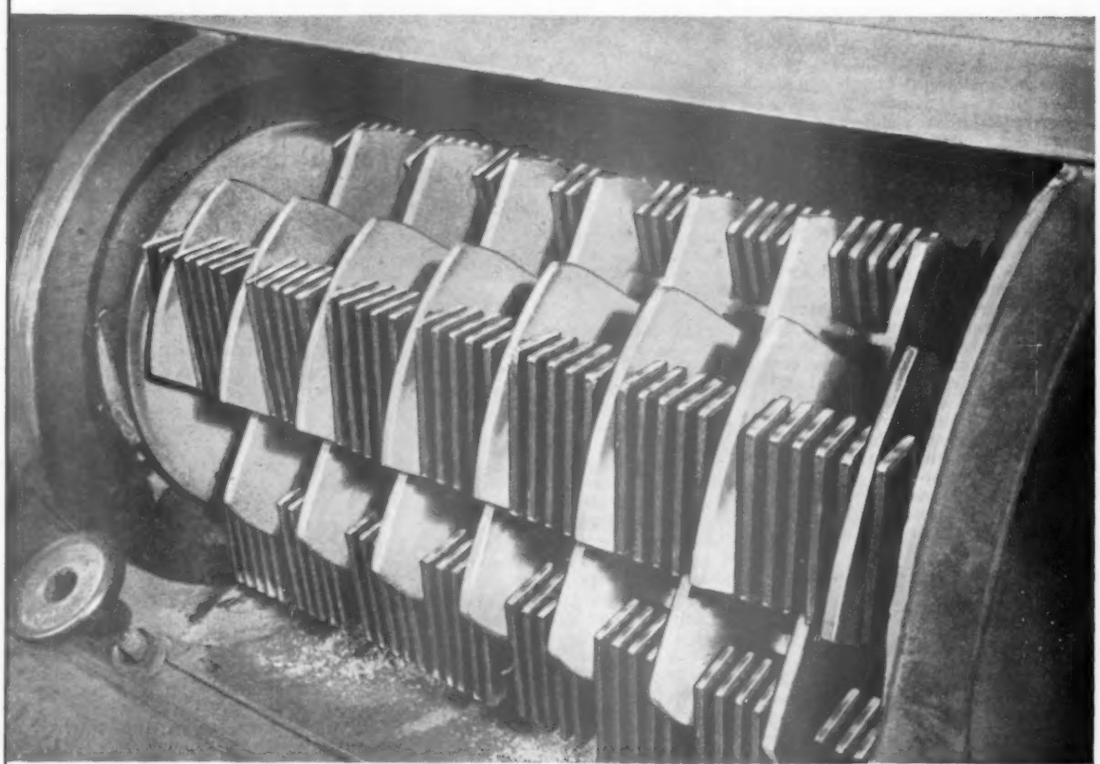

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Condition of Range Shows Improvement

FARGO, N.D. — Favorable March weather brought substantial improvement in the outlook for spring and summer grazing in the western part of the range states, according to the range and livestock report of the North Dakota Crop and Livestock Reporting Service.

The report noted that prospects are below average for new forage growth in the northern plains and the central and inter-mountain regions. However, it was pointed out that in northern and eastern Montana and in southern California topsoil moisture has been improved to the point where grass is starting and further timely rains in April and May could still result in satisfactory range forage development.

There is now only an outside chance that the drier areas in Montana and southern California will produce sufficient grazing to support present livestock numbers, the report said.

Range feed was rated at 78 April 1 as compared with 75 March 1. The condition a year earlier was 76 and the 10 year average was 74. In that numercial rating system 70-79 is considered fair.

Cattle and calves wintered in the best condition since 1958, the report pointed out. The mild weather of February and March was said to have favored a high survival percentage for young stock, and an above average calving rate is expected. The report stated that cattle from the central and southern plains are entering the spring grazing season and moving into feedlots carrying much more flesh than their counterparts of one year ago. At that time, severe spring storms had left many cattle showing excessive shrink, it was stated.

ADM Transfers Joseph W. Gorman

MINNEAPOLIS—Joseph W. Gorman, who has been in charge of soybean meal sales for Archer-Daniels-Midland Co. in Chicago, has been transferred to ADM's soybean merchandising office in Decatur, Ill., as a senior trader. All soybean meal sales formerly handled by him in Chicago also have been shifted to Decatur.

Mr. Gorman joined ADM in 1934, and has been in Chicago since 1940. In 1943, he was named sales manager there and placed in charge of soybean meal sales in the Chicago area.

Processing Firm Sold

CLINTON, ARK. — Sale of the Clinton Poultry & Egg Co., Inc., a poultry processing firm, to J. K. Southerland of Batesville, Ark., has been announced. The sale price was not revealed.

Mr. Southerland operates integrated poultry and feed interests at Batesville and has feed mills at Batesville, Melbourne and Mountain View.

The plant housing the processing plant was constructed by the Clinton Industrial Development Corp. about 18 months ago at a cost of $90,000. C. F. Reed was president and Olen McKnight was secretary-treasurer of the firm.

Mr. Southerland announced that Mr. McKnight would continue in charge of procurement and operation for the plant. Joe T. Rogers of Batesville was named marketing and office supervisor.

$100,000 BLAZE

PORTALES, N.M.—A grain elevator here, owned by Jay Slone, was destroyed by fire, causing damage estimated near $100,000.

Charles Yeilding | Robert Crawford | Herbert Schell | Hugh Tobler

PERSONNEL REALIGNMENTS—Daffin Manufacturing, Lancaster, Pa., a division of Daffin Corp., has announced a general expansion of its Feedmobile (mobile feed mill) marketing department with resultant realignments in responsibilities, according to G. E. Sprackling, director of marketing. Charles W. Yeilding, Dallas, Texas, has been named sales manager of the Midwest region, joining Herbert D. Schell and Robert I. Crawford, both of Lancaster, Pa., in regional sales manager status. Mr. Schell, formerly division sales manager for Feedmobiles, has been named northeastern regional sales manager, covering northern states east of the Mississippi and eastern Canada. Mr. Crawford, formerly Daffin's mobile field sales manager, is now southeastern regional sales manager. Hugh J. Tobler, Nampa, Idaho, former Feedmobile sales representative in the Northwest, has been named district manager in western U.S. and Canada.

February Feed Use Down from January

WASHINGTON — Feedstuff consumption during February totalled almost 1.7 million tons—about 200,000 tons less than in January but about the same as in the same month a year earlier, the U.S. Department of Agriculture said this week.

February consumption brought the season's five-month total use to around 9 million tons, or 480,000 tons more than in the same period of the previous season.

Production of most feedstuffs during February was below January's output and, except for soybean and alfalfa meals, also was below February, 1960, outturn.

Imports were up slightly from both a month and a year ago, but exports were down sharply.

Disappearance of a little over 1 million tons of oilseed meals was nearly 66,000 tons greater than a year earlier. Most of this increase was in soybean meal consumption. Except for linseed meal, supplies of oilseed meals, particularly soybean and cottonseed meals, were well above a year earlier.

Disappearance of grain by-product feeds during February ran about 48,000 tons less than in January but was little different from a year earlier. Consumption of fish meal was about the same as a month or a year earlier. Disappearance of alfalfa meal totalled 102,000 tons in February, 1961, compared with 120,000 tons in January and 87,200 tons in February, 1960.

Pillsbury Promotes Ovel Johnsrud

MINNEAPOLIS—Ovel Johnsrud has been promoted to the position of controller for the agricultural area of The Pillsbury Co., according to announcement by Dean McNeal, executive vice president.

Ovel Johnsrud

Mr. Johnsrud's new position was formerly held by J. C. Finlayson, who has been assigned to special projects within the agricultural area. Mr. Johnsrud joined the Pillsbury accounting department in 1952 at the feed division headquarters. In 1955, he was promoted to plant account manager at Springfield, Ill., followed by a transfer to Minneapolis where he was promoted to supervisor of all plant and cost accounting. He has held his present position as accounting and control manager for the merchandising divisions since 1959.

Mississippi Co-op Plans Egg Processing Plant; Expands Egg Program

CANTON, MISS.—Mississippi Federated Cooperatives has announced plans for construction of a $225,000 egg processing plant in Canton. This is an additional expansion of a project for which Canton approved a $175,000 BAWI bond issue in 1959.

The plant is part of the expanding egg programs of the cooperative. Currently MFC is reported to have 600,000 hens in its program and will soon have 800,000 hens producing.

Originally the plant at Canton was to be for egg breaking and processing. Now the plans are to erect a building with some 18,000 sq. ft. of floor space which will also include an egg grading plant.

Claude Smith, head of the egg division of MFC, said the egg grading operations will be doubled.

Mr. Smith said the new plant should promote increased egg production in this area. The egg breaking plant, he said, will provide a market for all those eggs which are rejected in the quality egg program and will also buy eggs from small flock owners in the area.

MFC launched its multi-million dollar quality egg production program two years ago. The first few months of the program, the producers and MFC suffered from a low price market which afflicted the entire country. However, those producers who stayed with the program have recovered, and the entire program is now on a "stable, profitable basis," officials said.

Because of that low price situation, plans for the egg breaking plant were delayed. MFC now feels that prospects are so bright that it is going ahead with the expanded plant as originally planned.

When the new plant is completed, the present egg grading operations will be moved from the Yandell Avenue building.

With the new plant MFC will seek increased quality egg production in the Canton area, as well as stimulating the production of eggs for the breaking plant.

Feed Distributor Named

YAKIMA, WASH.—L. F. Zwiesler Co. at Ashue has taken over the feed distributorship and dealership for General Mills, Inc., in the Yakima and Kittitas valleys, according to John Waite, who has been managing the General Mills feed store at Union Gap.

The store at Union Gap has been closed, said Mr. Waite, who has been transferred to the firm's Tacoma plant. Dale Annis of Moses Lake is field representative in this area.

Mr. Zwiesler plans some remodeling and additions to handle the feed distributorship.

Nulaid Farmers Assn. Reports Its Sales In 1960 Rose 2.1%

SAN LEANDRO, CAL. — Nulaid Farmers Assn. has reported that its sales in all activities in 1960 were $53,771,000, up 2.1% over the preceding year. The cooperative's feed tonnage for the year was 309,243 tons, almost the same as the preceding year, the annual report said.

The association's report noted that the average price of eggs per dozen in 1960 was 32.55¢ as compared to 29.07¢ the preceding year, an increase of 12%. The weighted average poultry feed price, excluding discounts per ton, was $80.37 in 1960 as opposed to $86.60 the preceding year for a 7.2% decrease in cost, it said.

The report stated that margins realized in the feed and supply department totaled $2,200,000. "These cooperative savings permitted patronage refunds at the total rate of 11.5% on mixed poultry and turkey feeds," the association said.

Total assets of the association at the end of the year were reported at $20,678,000, a 6.9% increase over the preceding year. Total liabilities were listed at $6,625,000, a 5.6% decrease over the preceding year.

Poultry and dairy mixed feeds increased their proportion of the feed department's 309,243 tonnage in 1960 to 70%, the report said. The association commented, "Under stimulation of the 'Bandwagon Program,' undertaken during the year, NU-HI-N tonnage increased 30% to 96,000 tons, almost one-third of total handlings. Economies realized in this very heavy volume were passed back to members in door price as an attractive and acceptable feature to the patron. The use of pellets and crumbles continued to increase, reaching a seasonal peak of 65% of total mixed feed production and averaging 50% of that production through the year.

"The new Turlock mill went into production late in the year and it now produces on one shift with substantial savings, tonnages previously manufactured at our Stockton and Merced mills. Second shift operation at Turlock is anticipated to meet seasonal peaks and growing area needs."

The association said that its two alfalfa dehydrators at Ryer Island and Vorden produced 12,138 tons, adequate supply until new crop season. Nulaid said that both operations continue to show "substantial savings for members of the association."

Quality control laboratory of the association reported analyzing 6,000 samples of NFA finished feeds and 1,500 raw material samples during the year. Linear programming of feed formulation was continued on an experimental basis and it was stated that results contributed to determination of economical ingredient levels.

Finance Plan

Nulaid pointed out that an extended finance plan undertaken in August of 1958 has provided both capital and production assistance to layer, fryer, turkey and dairy producing members. The association stated, "Under this

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PLAN EGG ASSOCIATION

DEVILS LAKE, N. D. — Preliminary plans were mapped for organization of a North Dakota Egg Producers Assn. at a meeting here of 15 representatives of regional associations. Temporary chairman A. J. Lanz of Devils Lake said the organization's chief objective will be the promotion of consumption of quality eggs.

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Feeders get ahead of the game when they give the nod to chick starter rations containing the proper amount of good grade dehydrated alfalfa meal. Authoritative research proves dehydrated alfalfa not only provides necessary Vitamin A, but vital Vitamin K, niacin and Vitamin E as well. In addition, there is an unidentified growth factor (or factors) that boosts growth significantly in as little as one week.

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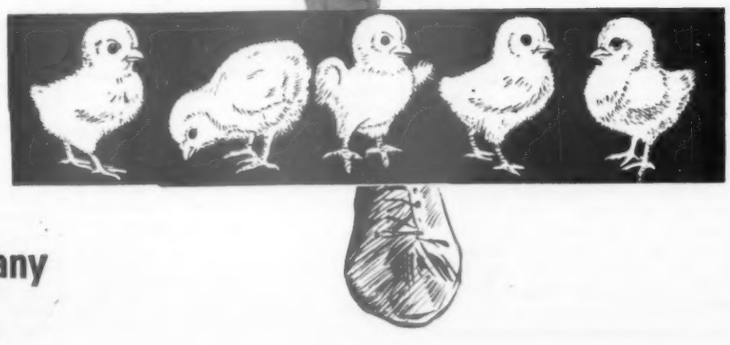

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POULTRY SPEAKERS—Using live chickens for demonstrations of debeaking, this panel of speakers emphasized cannibalism control at the Mississippi State University poultry school for the egg business. Left to right are Paul Yount, extension poultryman, Mississippi State University, moderator; Levoy Wilkerson, Garth Enterprises, Pelahatchie; Fred Adams, Adams Enterprises, Mendenhall; Dr. Charles H. Thomas, geneticist, MSU, and E. W. Garrison, associate extension poultryman, MSU.

Delayed Sexual Maturity, Marketing Procedures Topics at Mississippi Event

By ROBERT H. BROWN
Feedstuffs Special Writer

STARKVILLE, MISS. — One thing that the commercial egg industry needs to help in meeting egg marketing problems is more delayed sexual maturity of pullets, which may possibly be obtained through lighting control or restricted feeding. Also, more orderly marketing procedures are important.

These were some of the main points brought out at a poultry school stressing programs for raising replacements for egg production. The school was held at Mississippi State University and was sponsored by the Mississippi Poultry Improvement Assn.

The average housewife wants her eggs "larger, clean, uniform in yolk, and albumen," as Dr. L. A. Wilhelm, director of poultry development and market research for Quaker Oats Co., put it. To help attain this goal, sexual maturity must be delayed through lighting controls and/or restricted feeding as well as environmental control. Authorities discussing these topics included Dr. Cecil F. McClary, geneticist, Heisdorf & Nelson Farms, Kirkland, Wash.; Dr. Elbert J. Day, Mississippi State's nutritionist, and Hajime Ota, agricultural engineer, U. S. Department of Agriculture, Beltsville, Md.

As to sexual maturity delays, Drs. McClary and Day were asked numerous questions from the floor after their talks were concluded, indicating high interest in the subject of delayed egg-laying time for pullets.

A controlled lighting system will aid in delaying maturity to the extent of bringing in hens at 30 weeks.

Use of Controlled Lighting

Dr. McClary emphasized that controlled lighting may be efficiently used in conventional houses and can also be used to advantage even on open ranges. He stressed that windowless houses are not absolutely necessary to put this system into effect.

Dr. McClary said that lights may be rigged on poles on ranges, or attached to trees, or even mounted on portable stands.

Feeding Programs

Pointing out that the layer field has been neglected by nutritionists because of the prominence of the broiler industry, Dr. Day said that the layer people need some sort of program developed which would put off the time pullets become producers. Present day research that is available indicates this can be accomplished through restricted feeding and lighting controls, he said.

Control lighting research has been conducted in the South at Auburn University, he said, by Dale F. King, which brought about satisfactory increases in egg production.

Low Energy Feeds

Putting young pullets on high energy feeds too early only multiplies problems of small eggs and the accompanying small market prices. He suggested growers refrain from using high energy feeds, and use instead, a mash formula of limited energy content.

Growers are tending to feed pellets too soon since they are usually of high energy content. Pellets should be confined to feeding only on days when the wind is high and open range conditions justify their use. Mash is a better starter, Dr. Day said.

Tests have been made at the Newton, Miss., sub-station which indicate that there has been a premature switch to layer rations. When restricted feeding was used, there resulted a definite reduction in small eggs, he said.

He also cited work by Drs. Henry Fuller of Georgia and Robert Harms of Florida on restricted feeding. Dr. Harms' experiments included a low protein diet. Tests also have been made at Texas A&M which showed restricted feeding bringing about a decrease in the number of pee-wees.

Three Feeding Methods

Three methods of feeding were offered. One would be a complete feed for 8 to 24 weeks with 16 to 18% protein. Another would be a 20%

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IS POULTRY INDUSTRY TOO LEUKOSIS CONSCIOUS?

STARKVILLE, MISS. — Is the poultry industry too leukosis conscious?

It's entirely possible. It's been labeled a disease of growing operations and it's possible that some people get so wrapped up in the matter that they forget some of the fundamentals, remarked Dr. J. R. E. Taylor, department of poultry pathology, Dekalb (Ill.) Agricultural Assn., Inc., at the Mississippi State University poultry school.

"Many things have been called leukosis that are not. Many times it is possible we pick up birds which seem to show leukosis when it really is something else," he said.

Breeding for resistance may not be the major answer to the leukosis problem and isolation rearing seems to be the most important factor. He further suggested going through flocks in early stages. The trick is to keep the disease out of flocks during the growing period, he added. Clean quarters are still one of the best preventives.

Hales & Hunter Post To James Spurrier

CHICAGO—James F. Spurrier has been promoted to manager of Hales & Hunter Co.'s hog and beef cattle feeds department, according to announcement by Alex Gordeuk, merchandising manager.

James F. Spurrier

Mr. Spurrier is a graduate of Purdue University, where he majored in animal husbandry. He has also taken graduate work at Ohio State University. Prior to joining Hales & Hunter Co. as a territory manager in 1959, he was district feed specialist for McKesson & Robbins and assistant in animal husbandry at the University of Kentucky.

Permission Granted To Abandon North Arkansas Railroad

WASHINGTON — The Interstate Commerce Commission this week gave the Arkansas & Ozarks Railway Corp.—a line considered vital to the north Arkansas poultry and feed industry—permission to abandon its entire 71-mile line.

The commission said it later would release a formal opinion adopting an examiner's recommendation that the abandonment permit be contingent on the company selling the line to any responsible party that would continue operation.

The line, which formerly moved a large amount of the bulk feed that provided the ration for some 300,000 broilers and 150,000 turkeys, has been out of operation since May, 1960 when a flash flood destroyed a portion of its trackage and bridges.

The line runs from Seligman, Mo., to Harrison, Ark., and has a two mile branch line to Eureka Springs, Ark. It served broiler and turkey producing industry in Carroll County.

The Arkansas Legislature recently passed a law providing for a high tax on removal of the line for junk. Although the law was written in general terms, its supporters admitted that it was aimed at the defunct line.

Shippers and business along the route have tried unsuccessfully to block closing of the line.

Allied, Anheuser-Busch Merger Talks Reported

ST. LOUIS—There was no official word this week on the reported "exploratory" discussions regarding a possible merger of Allied Mills, Inc., Chicago, with Anheuser-Busch, Inc., St. Louis.

An Anheuser-Busch official was quoted by the Wall Street Journal as saying that there had been some discussions but that they were only "exploratory," with some consideration as to whether there would be any "mutual benefit" in merging the brewing and feed firms.

It was understood that only limited preliminary discussions had been held and that there was nothing at all definite at this time as to whether there might be any merger.

The Wall Street Journal said that Anheuser-Busch "is studying Allied Mills as a diversification move."

Anheuser-Busch's sales in 1960 were reported at $308,755,069, with net income of $15,415,910, or $3.15 per share. For its fiscal year ended June 30, 1960, Allied Mills' sales were reported at $105,657,128, with net income of $2,455,000, or $3.02 per share. For the six months ended Dec. 31, 1960, profits were $1,268,964, or $1.56 per share—compared with $996,704, or $1.22 per share, for the same period of 1959.

FDA Notes Conditions For Further Time Extension on Additives

WASHINGTON — The Food and Drug Administration has announced conditions which must be met by manufacturers to obtain further time extensions for safety clearances of food additives authorized by the new law just signed by President Kennedy.

Commissioner of Food and Drugs George P. Larrick pointed out that the law, which specifies a final cut-off date of June 30, 1964, does not automatically grant further extensions. Mr. Larrick said, however, that previously granted or pending extensions would be continued in effect until July 1, 1961, to enable submittal of the necessary information and its evaluation by FDA regarding substances for which further extensions are believed warranted.

Mr. Larrick pointed out that no extension can be granted unless the substance involved can be shown to present no undue risk to the public health during the extension period.

Requests for extension of time beyond July 1 will be considered if the following information is promptly submitted:

(1) The specified name or chemical designation of the substance, the use or uses for which it is desired, and the amount and purpose involved in each usage.

(2) A statement outlining actions taken to determine applicability of the food additives law, estimates of the amount of research work needed to date.

Any extensions beyond Jan. 1, 1962, will be conditioned upon a requirement of progress reports every six months.

These same criteria will apply to the obtaining of further time extensions under the 1959 law dealing with nematocides, plant regulators, defoliants and desiccants used in agriculture.

J. E. O'Neill, Producers Cotton Oil Co., Dies

FRESNO, CAL. — J. E. O'Neill, founder and executive vice president of Producers Cotton Oil Co. in Fresno, died April 10 in Palm Springs, Cal., of a heart attack. He was 68.

Mr. O'Neill died just two days after the death of his friend and cofounder, Ray Provst, 59.

In addition to his interest in Producers Cotton Oil, Mr. O'Neill was one of the largest cattle producers in the San Joaquin Valley.

He also was prominent in establishing a still-to-be-completed irrigation system reaching from northern to southern California, with a reservoir at Los Banos now under construction.

Mr. O'Neill was well known in ranching circles throughout the West.

He was born in Canada, moved to the Imperial Valley in 1914 and came to the Fresno area in 1926.

Polychemical Buys Piperazine Patent

NEW YORK — Polychemical Laboratories, Inc., has announced the purchase of U.S. Patent No. 2,850,426 formerly owned by the Chemo Puro Mfg. Co., Newark. The patent covers the use of piperazine phosphate in animal feeds and feed additives.

The Polychemical firm, which has manufactured and distributed piperazine to the feed industry for a number of years, acquired the patent at a bankruptcy auction of Century Chemical Co. assets. Century Chemical went into bankruptcy last fall after having owned Chemo Puro Mfg. Co. for about a year.

Polychemical Laboratories reports unchanged prices for piperazine.

State Official Says Check on Farm-Mixed Feeds by U.S. Possible

SPRINGFIELD, ILL. — The director of the Illinois Department of Agriculture has been quoted as saying that "farmers, feed dealers and drug companies face a possible crackdown on careless use of additives in livestock feeds."

A newspaper report quoted Ralph Bradley as saying that he has been advised that the Food and Drug Administration may step up inspections of test samples of farmer-mixed feed.

The checkup is said to follow the reported discovery that additives not cleared for use for livestock, poultry and dairy animals have been shipped in bulk to farmers.

A threat to both animal health and consumer health is involved, said Mr. Bradley. While prosecutions are not expected immediately, he said, some farmers may be penalized for selling their livestock in interstate commerce.

"Of equal concern is a suspicion that some farmers may not be using additives, cleared or otherwise, in recommended proportions," Mr. Bradley said.

He also was quoted as saying: "Rumors that farmers who mix their own feeds and use additives may be required to obtain a permit are erroneous. But farmers are responsible for making certain that additives bear proper clearance labels and that they are used in the right amounts.

"The farmers and the dealers in feeds and additives are equally responsible for making the livestock product safe for the ultimate consumer."

Mr. Bradley said indications point to an "increasingly tough" program on the part of FDA in the use of drugs and additives. Farmers will have to keep posted on decisions to stay out of trouble, and "crackdowns may reach high gear by late summer or early fall," the report said.

Mr. Bradley added that the Illinois General Assembly is being asked to provide his department with authority to step up testing and sampling of both feeds and fertilizers.

Tell Program for Nebraska Feeders Day April 20 in Lincoln

LINCOLN, NEB. — The program for the 49th annual feeders day at the University of Nebraska April 20, has been announced by its sponsors, the university's department of animal husbandry and the Nebraska Livestock Breeders & Feeders Assn.

A movie entitled "More Beef at Less Cost" will open the one-day event at 9:15 a.m. in the biochemistry and nutrition auditorium on the ag campus.

Morning speakers and their topics, all members of the university's department of animal husbandry, include Dr. D. C. Clanton, "Pelleted Rations for Beef Cattle," and "Protein Energy Levels for Wintering Bred Heifers"; Dr. J. K. Matsushima, "Antibiotics in Creep Rations for Beef Cattle," and "New Hormone Implants for Beef Production."

The morning session will also include a three-member panel which will discuss "Beef for the Consumer in the Sixties." Panel members and their topics include Dr. W. J. Loeffel, animal husbandry department, "Background and Research"; Wayne Bartley, manager of the meat department, Hinky Dinky Super Markets, Omaha, "Problems of the Retailer," and Mrs. Kendall Schwab, Lincoln homemaker, who will discuss the role of "Mrs. Consumer."

The afternoon session will feature a trip to the university's beef cattle research center, where present experimental research on hormone implants and nutrition levels for beef cows will be observed.

J. E. Givens

Paul E. Mullinix

Southern States Co-op Promotions for 3 Told

RICHMOND, VA. — J. E. Givens has been named assistant general manager of Southern States Cooperative. The appointment was announced by W. T. Steele, Jr., the cooperative's general manager.

J. H. Buchholz

Two other promotions, announced at the same time, went to Paul E. Mullinix and J. H. Buchholz. Mr. Mullinix, who was director of field forces, succeeds Mr. Givens as director of community services. Mr. Buchholz, who held the post of director of production and procurement, has been named director of wholesale services. This post has been vacant since late January when Mr. Steele was named general manager. Mr. Steele held this post for 14 years prior to his election.

In his new position, Mr. Givens will continue to concentrate his efforts primarily in the field of community services and distribution, Mr. Steele pointed out. Reporting directly to Mr. Givens—in addition to the retail distribution personnel—will be such departments as information-publications, merchandising, economic research and membership relations. Mr. Steele, as general manager, will work particularly with the wholesale and finance divisions of the cooperative, as well as directing the over-all administrative functions of the organization.

Duties

The positions of director of field forces and director of production and procurement are being eliminated and duties embraced in these posts will be included, respectively, in the new positions of Mr. Mullinix and Mr. Buchholz.

Mr. Givens, who has been director of the community services division since 1947, joined Southern States Cooperative in 1935 as assistant manager of Southern States Roanoke Cooperative, Roanoke, Va. He later served as a district manager, director of the cooperative's petroleum division, director of feed distribution and then as executive vice president of Cooperative Mills, the feed manufacturing subsidiary of Southern States.

Twin City Nutrition Seminar Set April 18

ST. PAUL—A review of the University of Minnesota's livestock research will be the program of the Twin City Nutrition Seminar April 18, according to Don Swanson, secretary of the group. The meeting will be held in Peters Hall on the St. Paul campus of the University of Minnesota starting at 7:30 p.m.

Chairman for the research review will be Bob Ahlin. Speakers and their subjects are: Dr. R. J. Meade, swine nutrition; Dr. O. E. Kolari, beef nutrition, and Dr. Robert Jordan, sheep nutrition.

Missouri Reports All-Corn Ration Studies, Other Cattle Feeding Work

COLUMBIA, MO.—Reports of research work on cattle and sheep were presented at the Spring Livestock Day of the University of Missouri held here.

Research covered in the reports included: Comparison of a Liquid Protein Supplement with Soybean Meal in Wintering and Fattening Rations, Winter Feeding for Quality Beef Production, Results in Feeding Yearling Steers at Two Protein Levels With Feed Additives, Shelled Corn vs. a Highly Palatable Pelleted Creep Ration for Suckling Lambs and All-Corn Rations for Fattening Ruminants.

ALL-CORN RATIONS FOR FATTENING RUMINANTS—Feeding of all-corn rations to ruminants cannot be recommended at the present time because information is not complete enough, Dr. W. H. Pfander told persons attending the 23rd annual Spring Livestock Day.

However, he did make suggestions about conditions needed for maximum use of ground corn in rations:

(1) The animal should be as full of roughage as possible when placed on the corn ration.

(2) Feed should be kept in front of the animals at all times or the animals should be fed at two to three hour intervals.

(3) Spoiled feed should be removed daily.

(4) The mixture must be fed in covered bunks to avoid leaching on rainy days.

(5) Better mineral supplements will be needed.

Dr. Pfander said the producer should be prepared for a large shrink when the animals are first put on feed, but this may be offset by a higher dressing percentage when the animals are slaughtered.

Visitors to the Spring Livestock Day saw four steers; two had been on all-corn rations and two on a grain and hay ration. Dr. Pfander noted that the animals on the all-corn ration were not as well filled as those receiving some hay.

The nutritionist said an all-corn ration has some rather formidable limitations. Some of these limitations include:

(1) Lack of physical properties believed to be needed to stimulate rumen function.

(2) Very rapid fermentation, but this may be controlled by frequent feeding and use of anti-acids.

(3) A limited intake of alkaline minerals. Corn tends to form acid.

(4) The quality of corn protein is low. Under conditions requiring high production, rumen organisms may not be able to convert it to bacterial protein at a rate fast enough to meet the animal's amino acid requirements.

(5) Corn is low in trace minerals.

(6) There are indications that roughage may be needed to stimulate the formation of certain vitamins.

Even with all these drawbacks, the researcher said he believes a satisfactory all-corn ration with no roughage may be worked out someday.

FEEDING HIGH MOISTURE CORN—Dr. G. B. Thompson reported that although high moisture shelled corn has been equal to dry shelled corn in feed required per 100 lb. gain in results of several experiment stations' cattle feeding tests, rate of gain here was 5% lower.

He said that about the same amount of high moisture shelled corn passes through cattle undigested as does dry shelled corn. This indicates the need to grind high moisture shelled corn unless hogs follow the cattle, he added.

High moisture ground ear corn has produced 100 lb. gain with an average of 10% less feed than ground ear corn in cattle feeding tests, he said. Rate of gain has averaged about the same for wet or dry ground ear corn.

High moisture sorghum grain has been equal or superior to dry grain if it is ground, he said. But results with unground high moisture sorghum grain have not been satisfactory.

A 30% kernel moisture content at time of harvest appears best from the standpoint of cattle performance and harvesting and storage losses, he advised.

RESULTS OF FEEDING YEARLING STEERS AT TWO PROTEIN LEVELS WITH FEED ADDITIVES—A 7.5% digestible protein ration apparently improved marbling scores and loin eye areas, but failed to increase live weight gains or feed efficiency above that obtained from a 6.5% ration, report Dr. G. B. Thompson, G. Boswell and J. E. Comfort. Their experimental work was conducted with four lots of yearling steers.

They said that feeding of 300 mg. Tapazole per head daily for the entire 112 day trial failed to improve carcass characteristics or feed lot performance.

They noted that feeding 600 mg. Tapazole per head daily the last 56 days of the trial did not improve carcass grade but resulted in more efficient gains and significantly increased rate of gain.

FEEDING HIGH MOISTURE ENSILED CORN TO BEEF CATTLE—Dr. G. B. Thompson and John Cowan report that both corn silage and corn cobs were satisfactory roughages for use with high moisture shelled corn in cattle fattening rations tested at the university. The experiment, they commented, was designed to compare a wet and a dry roughage for use with high moisture corn.

Dr. Thompson pointed out that some feeders had been wondering if it would be wise to feed a wet roughage like silage along with high moisture corn.

Cattle weighed 780 lb. at the start of the test. They were full fed high moisture, rolled shelled corn, a 30% protein supplement and either corn silage or ground corn cobs or mixtures of silage and cobs. The cattle gained about 3 lb. per day, made 100 lb. of gain on 10 bu. corn, and 38% of them produced choice carcasses in 112 days. All rations contained the same amount of roughage dry matter

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PASTURE CONDITIONS AT HIGH LEVEL

WASHINGTON — Pasture condition on April 1 was reported at the highest level since 1946, and was seven percentage points above the same date last year, reports the U.S. Department of Agriculture.

This early appraisal primarily reflects the moisture situation, for actual grazing is still quite limited and confined to the most southerly areas and the Pacific Coast.

Pastures were good in the south Atlantic and south central regions by April 1 and were furnishing more than the usual amount of grazing. Central and northern areas of the country have favorable pasture products, says the USDA.

Only average prospects prevail in western states as winter moisture supplies were generally short except in the Pacific Northwest. Supplemental feeding continued throughout March, but made only moderate demands on the generally adequate forage supplies. Livestock have wintered well in most areas with good feedlot gains and below average losses of newborn animals, USDA said.

'Limited Negotiability' Of Grain Certificates Probable, Says Council

WASHINGTON — At a recent meeting with representatives of the grain marketing industry, U.S. Department of Agriculture officials expressed an intention to have redemptions and sales under the 1961 feed grain program "at locations as close to points of production as will be practicable," the National Grain Trade Council reports.

"This may mean," said the council in a newsletter, "that eligible corn and grain sorghum producers will be able to redeem their certificates in kind only from on-farm storage or from government bin sites or from elevators located in or adjacent to a county where feed grain certificates have been issued."

"Limited Negotiability"

This interpretation, according to the council, indicates "that feed grain certificates will have a very limited negotiability."

Another probability: "Corn and grain sorghum producers who are entitled to feed grain certificates will be encouraged to receive cash payments in exchange for their certificates and that Commodity Credit Corp. will become the holder of a lion's share of such certificates as are issued.

"If this is the case and if, as it is reasonable to suppose will occur, CCC will not attempt to be reimbursed for advances or payments made to eligible corn and grain sorghum producers prior to Oct. 1, CCC will then establish a pool of certificates. After Oct. 1, the corporation will then re-examine its inventory position.

"If, on re-examination sales from its stocks of feed grains appear necessary," continued the council's newsletter, "sales will be made with emphasis placed on sales closest to the point of production. The local market price would be the higher of a backed-off terminal price or of a local merchant's selling price. In issuing loading orders to make sales possible, it is the department's present intention to make sales generally and locally in order that normal marketing patterns will not be disturbed.

"It is quite possible that after Oct. 1, if, as and when grain warehousemen request loading orders for feed grains, they may be offered an opportunity to purchase, under the 1961 feed grain program, those feed grains for which loading orders are requested."

Pacific Molasses Plans Baltimore Terminal

BALTIMORE, MD.—A bulk liquid cargo terminal will be established by Pacific Molasses Co. at Baltimore's new Dundalk Marine Terminal.

The Maryland Port Authority announced it has agreed to a 10-year lease covering 1.6 acres of land at the terminal along with pipeline access to the bulkhead for the movement of the molasses from ship to storage.

It is expected that work will begin before summer on construction by Pacific Molasses of two million gallon storage tanks and two 170,000 gal. mixing tanks along with warehouses, scale house and other facilities necessary for the storage and minor processing of the product.

Pacific Molasses Co., with headquarters in San Francisco, is a distributor of bulk molasses for feed and other uses, with 15 terminals located in this country and Mexico. Pacific presently has a molasses terminal in Baltimore located within the Western Maryland Railroad terminal at Port Covington.

Farm Stored Feed Grain Tonnage Up 2%

WASHINGTON—Tonnage of feed grains stored on farms on April 1, 1961, was 2% above last year and a third above average, reports the U.S. Department of Agriculture.

Corn stocks rose to a new high of 2.1 billion bushels, 1% above the former high for April 1 set last year. Sorghum stocks were moderately below a year earlier, but were still the second largest of record for the date. Barley stocks were 5% above April 1 last year with oats stocks showing a relatively sharp 14% increase.

Farm holdings of soybeans were sharply below the record high of the previous year and the smallest April 1 stocks since 1956.

Here's a U.S. summary:

Corn stocks on farms estimated at 2.1 billion bushels are at a new high for April 1, 1% more than April 1, 1960, and 39% above average.

Wheat stocks on farms at 258 million bushels are up 26% from last year and 15% above average.

Oats stocks on farms are estimated at 483 million bushels, 14% above last year but 3% below average.

Barley farm stocks total 126 million bushels, 5% more than last year and 25% above average.

Rye stocks on farms are estimated at 7.4 million bushels, 42% more than last year and 23% above average.

Flaxseed stocks on farms are 5.4 million bushels, about the same as last year but 49% below average.

Soybean farm stocks are estimated at 73 million bushels, down 49% from April 1, 1960, and 7% below average.

Sorghum grain stocks on farms totaled 108 million bushels, 3% below 1960, but 44% above average stocks for April 1.

Harvestore to Become A. O. Smith Subsidiary

MILWAUKEE, WIS.—The A. O. Smith Harvestore division will be incorporated as a subsidiary company on May 1, 1961, it was announced by L. B. Smith, president, A. O. Smith Corp. With headquarters at Kankakee, Ill., the subsidiary will be known as A. O. Smith Harvestore Products, Inc.

A. D. Hyde

Named as president and chief executive officer of the new company is Arthur D. Hyde, a director of A. O. Smith and until recently, executive vice president of General Mills, Inc., Minneapolis.

"Our board felt," Mr. Smith said, "that if A. O. Smith is to make a full contribution to the nation's changing agricultural economy, it could best be done by giving the Harvestore organization maximum flexibility and latitude in its operations."

Mr. Hyde joined General Mills in 1928. He became vice president in charge of research for the company in 1942. He was elected a director in 1952 and executive vice president in 1959. He resigned from that position Nov. 15, 1960.

He has been a member of the A. O. Smith board of directors since 1956 and is a director of Munsingwear, Inc., Minneapolis and Northern Natural Gas Co., Omaha, Neb. Also, he owns a large farm operation in southwestern Minnesota where he feeds 2,000 beef cattle from eight Harvestore units.

The principal manufacturing facilities for the new company are in Kankakee, Ill.

Reject Iowa Bill to Limit Co-op Activities

DES MOINES—The Iowa house of representatives has rejected a move to limit cooperatives to organizations producing and distributing farm products. The debate centered on the tax advantage that cooperatives have, and the question of whether Iowa cooperatives could become too large and could come under the domination of major out-of-state cooperative organizations.

Rep. Chester Hoegen of Waterloo, who has a fertilizer business, said the proposed bill would permit large cooperatives to come into Iowa and "gobble up" small co-ops now in existence. The bill under consideration covers cooperative elevators, farm supply organizations, REA and power co-ops, poultry associations, creameries, livestock associations and others.

R. G. Heinzelmann

William S. Dauler

2 Named to Staff at Sterwin Chemicals

NEW YORK — Appointment of Raymond G. Heinzelmann and William Stanley Dauler to the staff of Sterwin Chemicals Inc., has been announced by L. R. Patton, manager, animal health division.

Mr. Heinzelmann will be an associate in animal science, assigned to the sales department in New York, working under the supervision of Mr. Patton. Mr. Heinzelmann received his B.S. degree from the Delaware Valley College of Agriculture and Science, and his M.S. degree from the University of New Hampshire.

Mr. Dauler will be a sales representative in the southeastern region for Sterwin's animal health products and those of Delaware Poultry Laboratories and Dorn and Mitchell Laboratories, Sterwin subsidiaries. He will report to J. F. Bozman, Sterwin's southeastern manager at Atlanta, Ga. Mr. Dauler received his B.S. degree in agriculture from the University of Georgia.

USDA Tells February Condemnation Figures

WASHINGTON — Post-mortem condemnations of young chickens during the month of February came to 2.17% of the quantity inspected, according to figures announced by the U.S. Department of Agriculture.

In all, post-mortem condemnations amounted to 7,816,000 lb. (NYD weight), USDA said. Condemnations, by classes, were equivalent to the following percentages of the quantities inspected: Mature chickens, 2.52%; young turkeys, 1.14%; old turkeys, 1.86%; fryer-roaster turkeys, 1.27%, and ducks, 2.48%.

Ante-mortem condemnations totaled 995,000 lb. for all classes, USDA reported. Condemnations, by classes, were equivalent to the following percentages of live pounds inspected: Young chickens, 0.25%; mature chickens, 0.31%; young turkeys, 0.10%; old turkeys, 0.15%; fryer-roaster turkeys, 0.20%, and ducks, 0.07%.

Company Purchased

CHOWCHILLA, CAL.—The Valley Feed & Fuel Co. of Madera, Cal., has purchased the Chowchilla Grain & Milling Co. here.

USDA Outlines Steps For Redemption of Grain Certificates

WASHINGTON—The U.S. Department of Agriculture's latest feed situation report released this week contains an explanation of how the Commodity Credit Corp. will help producers obtain payments for land diverted under provisions of the government's 1961 feed grain program.

"The law requires that all certificates representing payment-in-kind be redeemed for feed grains, but a producer holding a certificate, but not desiring to take feed grains, may obtain assistance of the CCC in marketing the certificates for cash," USDA said. "CCC in this case will act as an agent for the producer, making an advance payment to the producer in cash through the county ASC office and subsequently marketing the grain represented by the certificates. The secretary has the authority to control the timing of the marketing of the grain so as to regulate grain movement into the market."

Whether the payment-in-kind negotiable certificates are used in securing government-owned feed grains or are converted to cash with the assistance of CCC, the farmer will receive certificates equal in value to the support rate for his county times 50% or 60% of the normal production on the land diverted, USDA said.

Payments for the first 20% of the base acreage of corn and sorghum grain placed under the program will be in cash or in kind based on 50% of normal production on the land diverted. On the diversion of up to an additional 20% of the corn-grain sorghum average acreage, the payment will be based on 60% of the normal production on the diverted acres.

In selling grain from CCC stocks or in paying the producer in kind, the quantity of grain would be the equivalent in value at the market price to value of the certificate. "Thus," USDA stated, "if the market price is below the support level, the quantity of grain coming from CCC stocks would exceed 50% or 60% of the production on the diverted acreage."

Arkansas' First Bond Money Goes to AVI

LITTLE ROCK, ARK.—Arkansas Valley Industries, Inc., Dardanelle, a feed mixing and poultry production, processing and marketing firm, will receive the first application of Arkansas' bond buying authority under Act 9 of 1960.

The Arkansas State Board of Finance has announced purchase of $150,000 worth of a $400,000 bond issue at Dardanelle and $150,000 of a $500,000 bond issue at Waldron. The remaining portion of these poultry industry bonds will be sold upon the open market.

The bond sale is to help AVI expand its facilities at Dardanelle, where feed mixing and poultry processing are being done, and provides for construction of a new processing plant and another hatchery at Waldron in Scott County. Harold Snyder, president of the Arkansas Valley Industries, appeared before the State Board of Finance April 12 and explained his poultry firm's plan.

MICHIGAN CONSTRUCTION

AUBURN, MICH. — A new grain elevator on the site of the former Valley Canning Co. in Auburn is being constructed to house operations of a newly-formed corporation, Auburn Milling Co. Construction of the new portion of the building was started last October, with the feed section of the company now open for business.

WHAT ARE FARMERS WHO BOUGHT SILOTRACIN SAYING ABOUT THIS SILAGE PRESERVATIVE?

Farmers from Vermont, Massachusetts, Indiana, New York, Connecticut, South Carolina, Pennsylvania, New Jersey, and the province of Quebec, who purchased Silotracin, have told us how Silotracin worked for them last season. Summarized below, the facts speak for themselves: Silotracin eliminates guesswork, minimizes spoilage and loss of nutrients, stops offensive odors. • If you are not offering Silotracin to your dealers this season, it is not too late to participate in this program. For complete information, write Animal Nutrition Department, Commercial Solvents Corporation, 260 Madison Avenue, New York 16, N. Y.

The use of Silotracin for silage preservation is covered by U. S. Patent 2,940,857

SUMMARY OF RESULTS 1960 FARMER SILOTRACIN EVALUATION REPORTS

Kind of Silage—%	Odor	Cattle Acceptance	Any Preservative Used Before	How Silotracin Compares	Comments
legume 25% grass 75%	pleasant	excellent	Yes	Better	Silage has kept well and fed out well.
legume 60% grass 40%	mild	excellent	Yes	Better	None.
legume 40% grass 60%	pleasant	excellent	Yes	Better	Odor and general pleasantness better.
grass 100%	pleasant	excellent	Yes	Much better	None.
grass 100%	pleasant	good	Yes	Much better	None.
grass 100%	pleasant	excellent	Yes	Much better	None.
grass 100%	pleasant	good	Yes	Same	None.
legume 100%	pleasant	good	Yes	Much better	No comparison; Silotracin is much better.
legume 90% grass 10%	unpleasant	good	Yes	Same	None.
legume 50% grass 50%	pleasant	excellent	No	——	None.
legume 60% grass 40%	pleasant	excellent	Yes	Better	Silotracin unquestionably best. Will use again.
legume 60% grass 40%	mild	excellent	Yes	Little better	Very palatable silage.
legume 75% grass 25%	mild	fair	Yes	Better	None.
legume 60% grass 40%	not pronounced	good	No	——	None.
legume 25% grass 75%	pleasant	excellent	Yes	Better	Definitely better odor. The silage smells good, clean and sharp. Cows like it.
legume 40% grass 55% weeds 5%	unpleasant	good	Yes	Same	None.
grass 100%	pleasant	excellent	No	——	None.
grass 100%	pleasant	good	Yes	Better	Silotracin is far better.
grass 100%	pleasant	good	Yes	Same	None.
grass 100%	pleasant	excellent	No	——	Will use again in '61.
grass 100%	excellent	Yes	Yes	Same	Easier to handle. Well pleased, will use in '61.
legume 60% grass 40%	not pronounced	excellent	No	——	It was very palatable.
legume 80% grass 20%	mild	excellent	Yes	Better	Much easier to handle and apply.
legume 50% grass 50%	pleasant	excellent	No	——	None.
grass 100%	pleasant	excellent	No	——	Liked it. Will use next year.
grains 100%	not pronounced	good	Yes	——	None.
legume 100%	mild	excellent	Yes	Better	None.
legume 100%	pleasant	excellent to good	Yes	Equal	Like corn and cob grind @ 100 lbs./ton.
legume 75% grass 25%	mild and pleasant	excellent	No	——	Will use again. Liked it.
legume 60% grass 40%	not pronounced	excellent	Yes	——	Gas is more even in silage.
grass 100%	pleasant	good	No	——	Odor good. No complaints from wife.
grass 100%	pleasant	excellent	No	——	Good color, odor and no spoilage.
legume 50% grass 50%	mild	excellent	Yes	Best	Easy to handle; results better than with others.
legume 100%	mild	excellent	Yes	——	Kept odor down. We liked it very much.
grass 100%	not pronounced	excellent	No	——	Liked it very much. Will use again next year.
legume 40% grass 60%	mild	good	Yes	Better than two of them, equal to the third	We will use Silotracin in 1961 as it is easier to put on the grass. No bad effects from skin irritations and rusting of machinery, such as with another product.
grass 100%	not pronounced	excellent	——	——	We have found this preservative to be very easy to use; silage is without bad odor, palatable and supports a high level of milk production.

Forum Transcript Records FDA Answers To Industry Questions on Regulations

WASHINGTON—Answers to questions concerning the legal status of various feed additives, combinations of drugs, changes in feed formulas containing drugs, Food and Drug Administration enforcement of legislated regulations, feed plant inspections and feeding instruction compliance by producers are contained in a transcript of a forum presented at the recent Grain & Feed Dealers National Assn. convention in Washington.

(Parts of the transcript pertaining to regulation of drug-containing concentrates used by local mixers and feeders appeared in Feedstuffs, April 8, page 4. The transcript will be concluded in a subsequent issue.)

Chairman of the forum was Frank T. Heffelfinger II of F. H. Peavey & Co., Minneapolis. Submitted questions were relayed by him to the forum panel of FDA officials, namely:

J. Kenneth Kirk, assistant to FDA's commissioner, George P. Larrick;

Dr. Charles G. Durbin, FDA veterinary medical director;

William W. Goodrich, chief of FDA's general counsel office, and

Ralph Kneeland, Jr., chief of the FDA food branch bureau of enforcement.

Questions and answers — abridged in some instances—excerpted from the transcript follow:

Question: I have an NDA (New Drug Application) for a 32% cattle supplement with stilbestrol. This has been right for the farmers in my area who usually have fairly high-grade hay. This year their hay is of lower quality and they want a higher protein supplement with stilbestrol, preferably 40%.

I understand that you (FDA) will not issue me a permit to make a 40% supplement with stilbestrol and, therefore, have not applied. Am I correct?

If so, how is it in the public interest for me to be unable to serve these farmers when the percentage of stilbestrol could be controlled in the 40% ration the same as in the 32% ration?

Mr. Kirk: He is not correct. Assuming that all he wants to do is to revise his feed ingredients and make no change in the milligrams of stilbestrol per day per animal, he is at liberty to do that by merely writing to us and telling us what change he has in mind.

We changed our regulations well over a year ago to take care of this very situation.

It should, however, be recognized that in doing this he is not making two stilbestrol feeds where one only existed before. If he changes from one to the other, tells us about it, he's in the clear.

Question: It is common knowledge that terephthalic acid (TPA) has not been cleared by FDA as a feed additive. It is also common knowledge that this chemical potentiating agent is being openly recommended by certain experiment stations and included in local mixed rations. What is the status at the present time of TPA?

Mr. Kneeland: We have taken regulatory action against terephthalic acid in possession of feed manufacturers who were using it illegally; we have taken regulatory action against firms who are shipping it for such purposes, and we shall continue to take such regulatory action where such violations are encountered.

Question: I understand that FDA has prepared lists of substances which are generally recognized as safe. Safety of any other additives must be proved to FDA for their intended use unless the manufacturer is certain that it would be generally recognized as safe. Where can we get such a list?

Mr. Kirk: Well, the list Food and Drug published under the Food Additives Amendment was in several issues of the Federal Register. We have reprints of these and we will be glad to send them to anyone who wants them. It should be kept in mind that in printing this generally recognized as safe list, we were not trying to be all-inclusive. We know there are lots of things that are "gras" as we call "generally recognized as safe" which are not on the list. If there is any question and you think a certain product is "generally recognized as safe" and you don't find it on the list, you may want to ask us about it and we will be glad to reply and tell you just how we believe the article stacks up under the Food Additives Amendment.

Question: How do you propose that the livestock or poultry producer handle concurrent disease problems requiring preventive or therapeutic treatments with drugs which have not been cleared in the necessary combination? What is the alternative —use both the feed and water route of medication or what?

(This question, Chairman Heffelfinger noted, was prompted by a GFDNA convention address in which Dr. Roland M. Bethke, vice president in charge of research, Ralston Purina Co., said (Feedstuffs, March 25, page 108): "It some instances there are no drugs cleared in combination for the treatment or prevention of two separate diseases at the same time. For example, there is no coccidiostat and blackhead preventive or treatment cleared in combination for turkeys. This represents a very real problem to the feeder, to the feed dealer and the feed manufacturer. He has a decision to make between letting his birds die of either coccidiosis, or blackhead, or feeding an illegal combination.")

Dr. Durbin: Well, first let me say that the responsibility for clearing combinations, if there is a need for a combination, is up to the manufacturer. I am sort of at a loss as to why someone hasn't cleared up the particular point Dr. Bethke brought up about blackhead and coccidiosis in turkeys concurrently.

For short-term therapy you could go to a water medication.

The reason for our concern regarding indiscriminate use of combinations was brought out, I believe, by Dr. Bethke in another part of his speech. We don't know what will happen if you add two things together. We don't know their incompatibilities. Until we do, we can't recommend their use. Therefore, I think that this is the responsibility of the drug companies and the investigators to come up with the answer on the compatibility, the tissue residue problem and the excretion time of any combinations that they may wish to give.

Question: We have plenty of cattle supplements approved with stilbestrol; however, many customers are constantly changing their ingredients and their protein content. They are not deviating from a 10 mg. basis per ton of finished feed, but do I have to write a letter to Lilly and then to Food and Drug when all I want is to change the ingredients and the protein content?

This seems very unnecessary and creates great gobs of extra clerical work which will eventually wind up in nothing but confusion.

It seems to me that if a mill has a stilbestrol license we should be allowed to make any type cattle supplement we choose as long as we do not add over 10 mg. of stilbestrol per ton of feed. Why all the red tape and letters just for the change of ingredients and the change in protein content?

Mr. Kirk: That fellow must have a terrible time keeping up with what's going on in his plant, but actually I wonder whether there's a full realization of just how this change in feed ingredients works.

Some people have written to Food and Drug, obtained a new drug application for a specific combination of corn and what have you, and that's what they are authorized to use. Others have obtained new drug applications which said some days we'll use the mixture of this, that and the other thing; some days we may add soya; some days we may add corn and the like.

And we have been willing to accept that, so if this fellow can work out what he's doing and get himself a general statement that would be satisfactory to our Veterinary New Drug people and they're not going to be hard to please on this, I would think it would solve his problems. But again the changes do not authorize additional feeds over and above the number he already has.

Question: How can a control program that involves thousands of dealers and possibly hundreds of thousands of feeders be effectively enforced?

Mr. Goodrich: This question assumes that your problem is the greatest problem we have and that it's unmanagable. Actually, we have a lot of big problems and Food and Drug has a very small force, so all of these programs can be enforced only on a selective basis by Food & Drug choosing the right enforcement case.

But before we get to enforcement, let me say this kind of a law is very largely self-enforcing. What we're trying to do, and I'm sure what you're trying to do, is first to clear the product on a safety basis with instructions which will lead to safe use; then if these instructions, which we try to make as simple as possible, are followed we have no problem of violation.

Now it isn't hard to enforce this sort of thing when you have a product, a medicated feed, which has been, one convention program speaker said, cleared through the Veterinary New Drug branch or through the Antibiotics division. What we're doing there is not just stamping these applications out. Our scientific people are reaching decisions that used in accordance with the proposed labeling will be safe. Once the application is approved, our problem is simply to find out through our in-

(Turn to FDA, page 97)

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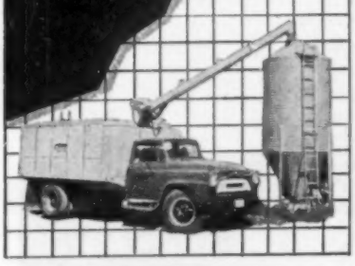

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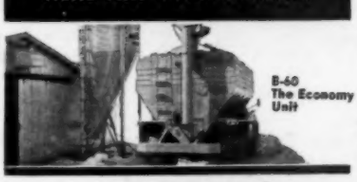

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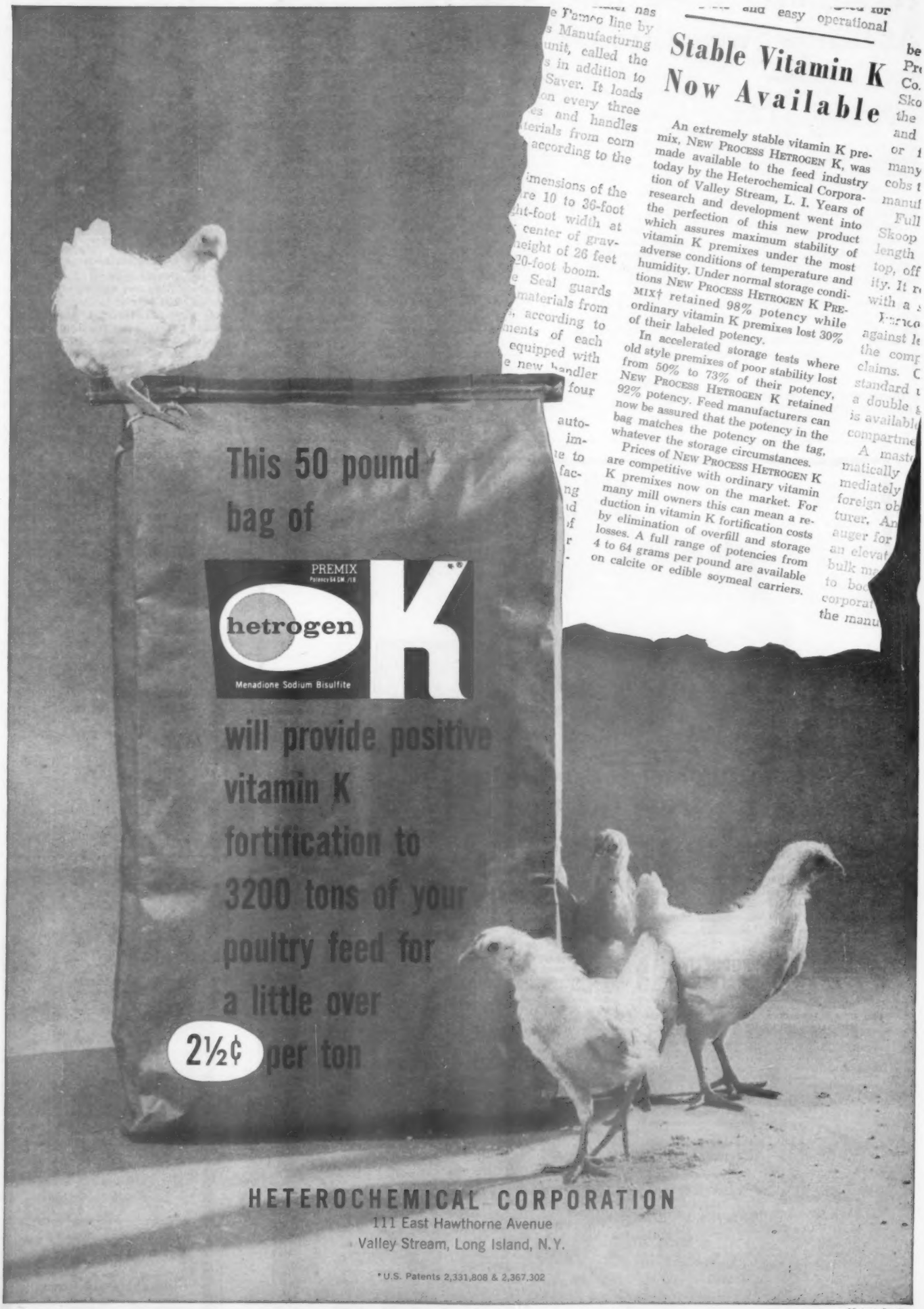

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†Patents Pending

Highlights of Research Reported At Illinois Swine Growers' Day

By PAT CLOSE
University of Illinois

URBANA, ILL. — Highlights of swine research conducted during the year were reported to 1,100 persons attending the recent Illinois Swine Growers' Day on the campus of the University of Illinois here.

Dr. D. E. Becker, head, swine division, department of animal science, discussed molasses and calcium as ingredients in fortified corn-soybean meal rations.

Livestock specialist W. F. Nickelson reported studies concerning Hygromycin B and gestation rations for sows and gilts.

Antibiotics for growing swine were covered by another livestock specialist, G. R. Carlisle.

Several other topics of interest to feed men and producers also were covered.

Molasses

In his report, Dr. Becker explained that many hog producers have wondered whether blackstrap molasses has any value as a substitute ingredient in fortified corn-soybean meal rations. Producers have thought that a small amount of molasses might improve feed intake and gain of growing pigs by making the ration more palatable, he noted.

So Dr. Becker compared three groups of pigs fed a fortified corn-soybean meal ration. One group served as the control group. The second had 2.5% molasses added to the ration while the third had 5% molasses added.

He found no evidence that either level of molasses improved the pigs' performance. In fact, neither level significantly affected the rate of gain one way or another.

On the other hand, the pigs receiving molasses required more feed per pound of gain than pigs on the control ration. The group fed 2.5% molasses required 2.1% more feed; the group fed 5% required 5% more feed.

In summing up this study, Dr. Becker said, "These results support earlier findings that blackstrap molasses has only 60% the value of corn in fortified corn-soybean meal rations."

Calcium Levels

Moving on to his calcium report, Dr. Becker explained that Illinois Ration 16, a fortified corn-soybean meal ration containing 16% protein, provides 0.75% calcium. This is a slightly higher level than the NRC proposes for either the weanling pig or the sow and gilt during gestation. (The University of Illinois says Illinois Ration 16 may be used for either growing pigs or breeding animals.)

Dr. Becker said that during the past 10 years, several experiment stations have shown that an excess of dietary calcium will often slow the rate and efficiency of gains of growing hogs. The excess calcium apparently depresses performance by increasing the severeness of a zinc deficiency commonly called parakeratosis in swine.

Of course, it was noted, this disease will occur without excess calcium—therefore, it's suggested that all growing pig rations be supplemented with at least 25 ppm. of zinc. At this level of supplementary zinc, it's desirable to know how various calcium levels affect growing-finishing pigs, it was stated.

Therefore, Dr. Becker's studies determined how varying calcium levels, added as ground limestone, influenced the rate and efficiency of gains in growing-finishing pigs fed different types of rations.

The ingredients of the three rations used are listed in Table 1.

For the test, Dr. Becker used Duroc pigs that weighed about 50 lb. when the tests started. The pigs had previously been fed adequate rations and had made satisfactory gains. During the test they were fed free-choice from self-feeders and were kept on concrete feeding floors.

The pigs were allotted at random to the various calcium levels. The calcium levels added to the corn-soybean meal ration and corn-soybean meal and fishmeal rations are listed in Table 2.

Protein Sources

Dr. Becker pointed out that results of this test agreed with earlier tests: that rate and efficiency of gain of pigs fed fortified corn-soybean meal ration were equal to those of pigs fed a ration in which a mixture of soybean meal and fishmeal provided the supplementary protein. He added that pigs receiving the 0.35% calcium level in the fortified corn-soybean meal ration showed no gross symptoms of calcium deficiency.

Table 3 compares pigs fed soybean meal only with a soybean meal-meat and bone scraps mixture as supplementary protein.

This test revealed that pigs with meat and bone scraps included in their ration made slower gains than pigs fed only a fortified corn-soybean meal ration. Dr. Becker said, however, that their poorer performance did not seem to be related to the level of calcium in their ration.

It seemed that the depression in rate and efficiency of gain caused by the addition of 2.0% limestone was greatest when soybean meal rather than the mixtures provided supplementary protein. Perhaps at this calcium level the fortified corn-soybean meal ration was more deficient in zinc than the other rations, it was noted.

In summing up the calcium study, Dr. Becker said that "with the type of rations used in this study and supplemented with 25 ppm. of zinc, the calcium level may range as high as 0.90 to 0.95% of the ration without depressing the rate and efficiency of gains in growing pigs.

"But," he added, "further research is certainly needed on this problem. Additional studies should include the

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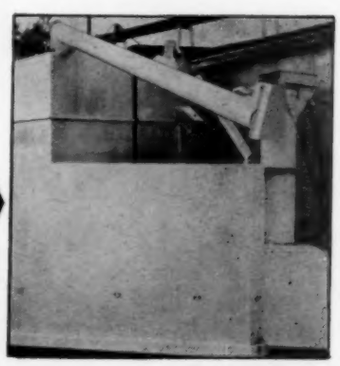

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TABLE 1. Percentage Composition of Control Rations

Ingredients	Corn-soybean meal	Corn-soybean meal and fish meal	Corn-soybean meal and meat and bone scraps
Ground yellow corn	80.25	81.75	81.25
Soybean meal (50%)	18.00	11.50	13.00
Fish meal, special	....	5.00	....
Meat and bone scraps (50%)	....	....	5.00
Vitamins, minerals, antibiotics	1.75	1.75	.75
Calculated calcium level, %	.35	.50	.54

TABLE 2. Response of Pigs to Calcium Levels in Corn-Soybean Meal Rations and Corn-Soybean Meal and Fish Meal Rations

Limestone added, %	0.0	0.5	1.0	1.5	2.0
Calculated calcium level, %					
Corn-soybean meal	0.35	0.55	0.75	0.95	1.15
Corn-soybean meal and fish meal	0.50	0.70	0.90	1.10	1.30
Average daily gain, lb.*					
Corn-soybean oil meal	1.56	1.75	1.74	1.65	1.55
Corn-soybean oil meal and fish meal	1.70	1.62	1.72	1.70	1.63
Average	1.63	1.68	1.73	1.68	1.59
Feed per pound of gain, lb.					
Corn-soybean oil meal	2.77	2.83	2.81	2.90	3.13
Corn-soybean oil meal and fish meal	2.93	2.85	2.96	3.01	2.98
Average	2.85	2.84	2.89	2.96	3.06

*Seven pigs per lot.

TABLE 3. Responses of Pigs to Calcium Levels in Corn-Soybean Meal Rations and Corn-Soybean Meal and Meat and Bone Scraps Rations

Limestone added, %	0.0	1.0	2.0
Calculated calcium level, %			
Corn-soybean oil meal	0.35	0.73	1.11
Corn-soybean oil meal and meat and bone scraps	0.50	0.92	1.30
Average daily gain, lb.*			
Corn-soybean oil meal	1.74	1.72	1.57
Corn-soybean oil meal and meat and bone scraps	1.58	1.61	1.46
Average	1.66	1.66	1.55
Feed per pound of gain, lb.			
Corn-soybean oil meal	2.87	2.99	3.04
Corn-soybean oil meal and meat and bone scraps	2.78	2.64	3.01
Average	2.83	2.82	3.02

*Seven pigs per lot.

other nutrients, such as phosphorus, zinc and vitamin D, which are related to calcium nutrition. And consideration should be given to bone calcification as well as to rate and efficiency of weight gains."

Hygromycin B

Livestock specialist W. F. Nickelson reported that university tests revealed that hygromycin B fed to pregnant sows and gilts had no harmful effects.

He said that hog producers had observed that hygromycin B fed for prolonged periods seemed to impair the hearing of some pigs. Although this would not be a problem in market hogs, it could be in breeding stock since deaf sows and gilts would be more likely to lie on baby pigs.

There have also been unconfirmed reports that this antibiotic, which is used as a worming agent, also produced abnormal pigs when fed to sows, it was stated.

To see if these reports were true, university researchers fed the worming agent to 17 crossbred gilts during the last 90 days of pregnancy and during the early lactation period.

Another group of 17 similar crossbred gilts served as the control group. Both groups, incidentally, had also received hygromycin when they were about seven months old, it was reported.

Results showed that both groups farrowed an average of about 10 pigs per litter. All pigs were considered normal and weighed about 3 lb. at birth.

All pigs gained an average of 8 lb. from birth to three weeks of age.

The pigs from gilts fed hygromycin B had a 10% mortality rate from birth to three weeks of age, which was higher than the control group. But researchers do not consider a 10% mortality rate excessive at this age. Furthermore, gilts fed hygromycin B still weaned slightly more pigs at three weeks of age than did gilts in the control group, the study showed.

The research men did not determine whether the gilts' hearing had been impaired. But no pig losses due to impaired hearing of the gilts seemed to occur, they reported.

Energy Levels for Sows

In another report, Mr. Nickelson discussed a study that concerned energy levels for sows during the last two thirds of their gestation period. He said, "These experiments were designed to see how the energy level of a ration affects litter size and performance for the first 14 days after birth."

ILLINOIS SWINE DAY—Visitors at the recent Illinois Swine Growers' Day at the University of Illinois listen to Vernon Virgin, right, farm supply company representative from Lebanon, Ill., explain how a portable farrowing crate operates. From left to right are: Maurice Walk, Lloyd Walk and Pat Niemeyer, all of Sigel, Ill., and Clinton Cutright, Effingham County farm adviser.

Two rations were compared. Ration A, the high energy ration, contained: (1) 79% ground yellow corn, (2) 18% soybean meal and (3) vitamins, minerals and antibiotics.

Ration B, the low energy ration, contained: (1) 51% ground yellow corn, (2) 44% solvent soybean meal, and (3) vitamins, minerals and antibiotics.

Ration A contained about 16% crude protein, while Ration B contained about 27%. Both rations were formulated so that 5 lb. of Ration A and 3 lb. of Ration B contributed the same quantities of vitamins, minerals, protein and antibiotic.

Therefore, the essential difference between the treatment groups was the energy consumed, it was stated.

The rations were fed during two experiments. Experiment 1 took place during the fall of 1959. Experiment 2 took place during the late summer of 1960.

In Experiment 1, two groups of eight sows each were confined to a ¼ acre dirt lot. In Experiment 2, each group of 14 sows and gilts was confined to a one-acre plot of alfalfa-ladino clover.

Table 4 summarizes the results.

As the table shows, Ration B pigs in Experiment 1 were heavier at birth and at two weeks of age. Yet Ration A pigs had a higher survival rate.

In Experiment 2, Ration B was upped to 3½ lb. fed daily because sows fed 3 lb. of this ration in Experiment 1 lost weight during gestation.

Both sows and gilts fed Ration A in Experiment 2 farrowed more live pigs per litter than sows and gilts fed Ration B. Pigs from all sows in this experiment, regardless of ration, weighed about the same at birth and at two weeks, and had about the some survival rate.

But pigs from gilts fed Ration A performed much better than pigs from gilts fed Ration B. On the other hand, pigs from gilts fed Ration B had a much higher survival percentage, 87.2%, than pigs from gilts fed Ration A, 64.5%, the study showed.

Mr. Nickelson drew these conclusions from the study:

(1) Sows confined to dirt lots lost

(Turn to HIGHLIGHTS, page 95)

TABLE 4. Energy Levels for Sows and Gilts During the Last Two-Thirds of the Gestation Period

Experiment 1 (Fall of 1959)*	No. live pigs farrowed	Av. wt. lb.	Wt. at 2 wk. lb.	Survival % at 2 wk. %
Ration A (5 lb./head)	7.3	2.7	7.9	98.6
Ration B (3 lb./head)	7.8	3.2	10.6	89.7
Experiment 2 (Late Summer, 1960)**				
Ration A (5 lb./head)	10.5	2.7	8.0	76.1
Ration B (3½ lb./head)	8.9	2.4	7.0	86.1
Averages				
Ration A	9.5	2.7	8.0	84.9
Ration B	8.8	2.8	8.5	87.0

*Sows only were used in Experiment 1.
**Sows and gilts were used in Experiment 2. The figures shown are averages of the sows' and gilts' performances.

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'Time to Take Labeling Out of Horse-&-Buggy Stage,' Feed Man Says

ST. LOUIS—"The time has come to take our labeling out of the horse-and-buggy stage," remarked E. G. Cherbonnier, Feed & Feeding Service, St. Louis, in a letter sent last week to Bruce Poundstone, secretary, Association of American Feed Control Officials.

Mr. Cherbonnier's views on label revision were expressed relative to an investigation of feed labeling requirements being conducted for AAFCO by John Kuzmeski, Massachusetts feed control official. Mr. Poundstone recently noted in his Feedstuffs' column, Feed Control Comment, that Mr. Kuzmeski welcomes comments and suggestions from industry, college and control officials, and hopes to have a preliminary report readied for the May 7-10 spring meeting of AAFCO in Chicago.

"President James North of Nutrena Mills, Inc., Minneapolis, has made some valuable suggestions concerning labeling and I particularly endorse the idea that future labeling require only the analysis and the listing of any special ingredients which state or federal officials might require," Mr. Cherbonnier stated.

(Mr. North's suggestions appeared in Feedstuffs, March 18, page 6. Warren Armstrong, Nutrena's quality control and formulation manager, raised the issue of tag simplification at the 1960 fall meeting of AAFCO in Washington. Since then a survey of the industry and of control officials has been undertaken by AAFCO to determine whether it is possible and desirable to develop a tag "bearing information that will reflect to a greater degree the nutritional value of feed than does information on the present tag.")

Broad Benefits

It is Mr. Cherbonnier's opinion that an updating of labeling requirements would "benefit the farmer, the feed control official and the feed manufacturer.

"Let's think about the conditions which prevailed when the present labeling requirements were adopted," Mr. Cherbonnier wrote. "The formula feed business was in its infancy. Many feeds were based on what might be called 'accidental' by-products which ranged from very high to low quality. It was natural that the farmer and the feed officials wanted to know what was in each feed.

"Also, feeds of those days were fairly well adjusted to the efficiency of animal production. In general, they met the farmers' needs.

"Today we have improved breeding, better sanitation, a greatly increased knowledge of nutrition and, to satisfy his customer, the feed man must have an extremely efficient ration. He has more at stake in the future of his brand and its reputation than the farmer, who may change at any time.

Industry's Mission

"It has often been said that the mission of the feed industry is to do for the farmer what he would do himself if he had plant, laboratory, purchasing, storage and other facilities. It has long been known that carbohydrate values are pretty much interchangeable and today, through scientific research and synthetic supplementation, proteins can be made pretty much interchangeable and savings in cost passed on to the farmer.

"However, if the feed manufacturer is 'locked in' on a certain list of ingredients, he cannot take advantage of market changes and pass them on to his customer. If a certain ingredient is listed, he must put it in the feed even if it is not economical to do so. He might change the registration of the feed, but it would be entirely impractical for him to make these changes as often as market conditions might justify. This would also put a considerable burden on feed control officials.

"When I was last in England, I was impressed by the ability of the British Oil & Cake Mills to vary formulas according to changes in raw material costs, maintain their quality and pass savings on to their customers. In England only the analysis is needed plus any special ingredients required by the Ministry of Agriculture."

Mr. Cherbonnier noted that these comments constituted personal views and "do not necessarily represent those of the Grain & Feed Dealers National Assn.," for which he is feed advisor.

Schroeder Sales Post To Darrell Bruner

PHOENIX, ARIZ. — Schroeder Sales Co., West Coast feed ingredients supplier, has appointed Darrell Bruner of Phoenix, sales representative for the state of Arizona and the Imperial Valley.

Darrell Bruner

Mr. Bruner, a graduate of the University of Arizona with a degree in animal husbandry, formerly was a Chas. Pfizer & Co. sales respresentative in Washington, Oregon and California.

Mr. Bruner will handle Smith-Douglass feed phosphate supplements in his area along with Schroeder Sales' complete line of feed ingredients.

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Iowa Cattle Studies To Be Reported at Feeders' Day May 31

AMES, IOWA—Iowa's 43rd annual Cattle Feeders' "Hey" Day will be held May 31 at Iowa State University, Dr. Wise Burroughs, beef nutrition researcher, announced.

More than 200 experimental cattle will be shown at an open house at the beef nutrition research farm northwest of Ames beginning at 9 a.m. Discussions will follow in the university armory at 10:30 a.m.

Research results will be reported on high-concentrate, low-roughage fattening rations, in which two of the lots were fed mechanically. One phase of this research, completed last fall, resulted in average daily gains as high as 4 lb. per day for individual animals.

Studies of vitamin A supplemental needs in fattening cattle rations will be reported. Another series of experiments will be reported comparing the value of wilted and direct-cut grass silage. Dr. Burroughs said that another experiment likely to arouse interest is on wintering rations for beef cattle, using both liquid and dry urea supplement.

On the afternoon program Dr. John Matsushima, beef cattle nutritionist at University of Nebraska, will discuss the relation of rations to beef cattle. Paul Goesser of Swift & Co., Chicago, will report on beef quality from the meat industry standpoint.

Robert Rust and Dr. E. A. Kline, animal husbandmen, Iowa State University, will demonstrate elements of beef quality related to feeding; and Dr. L. N. Hazel, Iowa State University breeding researcher, will discuss the relationship of cattle breeding to beef quality.

A special program for wives of cattle feeders will be conducted by staff members of the College of Home Economics.

Charles Vantress Buys Maryland Farm

PRINCESS ANNE, MD. — With emphasis on acclimated chickens in mind, Charles Vantress Farms, a branch of International Genetics Corp., Duluth, Ga., has announced purchase of the 780-acre Cedar Lane Farm near here for setting up a poultry farm.

Through acclimation, it was stated, the birds will become accustomed to the environmental conditions of the middle Atlantic states.

The Vantress firm is reported engaged in building similar farms in Arkansas and California, also.

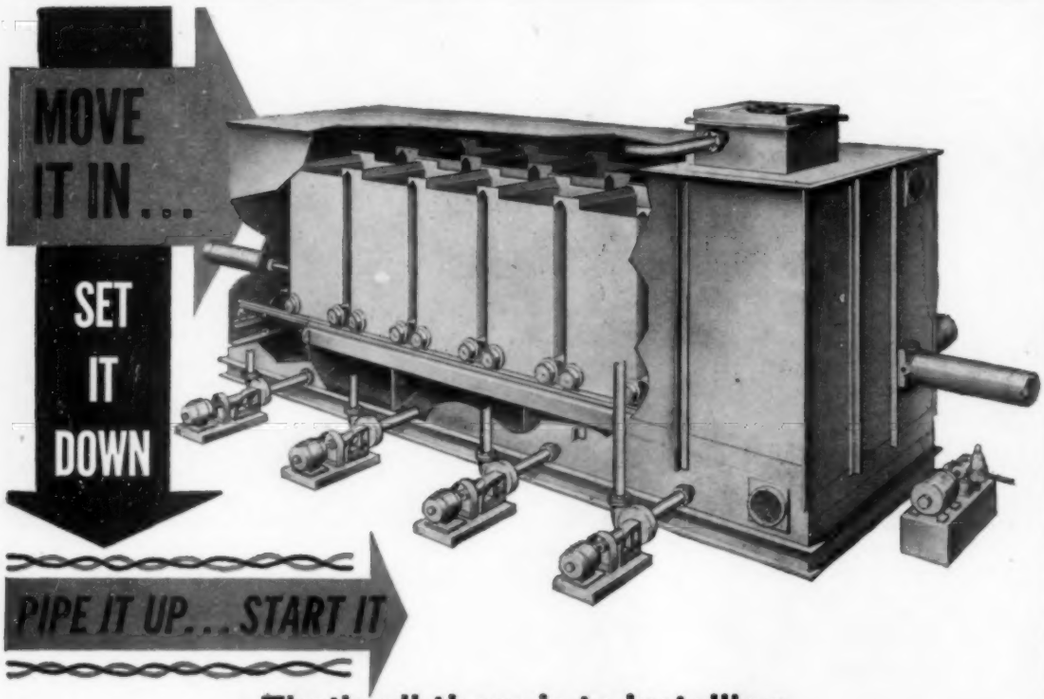
In explaining the move, it was stated that East Coast hatching egg producers have been receiving their cockerels from Duluth, Ga., and Salmon Falls, N.H. Frank Schubert, northeastern representative, who will soon move to Salisbury, Md., to supervise this operation, said that eggs produced at Duluth have been shipped through Delmarva to Salmon Falls. There they are incubated and the day-old cockerels are shipped back to Delmarva. It is a 1,200 mile trip for the eggs and a 600 mile return trip for the cockerels to the Eastern Shore, he noted. This will be eliminated when the Princess Anne farm gets into production, he said.

"Our production policy," Mr. Vantress said, "has been to produce all of our eggs for cockerel production in Georgia, on and/or near the immediate vicinity of our Duluth headquarters pedigree farm. The eggs were then shipped to our five distribution incubation plants serving each region of the nation.

"Now we are building these new farms in the principal broiler areas which will replace leased farms in Georgia for the production phase of our business. All of our pedigree breeding will continue to be done at Duluth, Ga., on our pedigree farm, and foundation stock will be supplied from Duluth for the new farms."

The Princess Anne farm will be named Vantress Northeastern Division Farms, Inc.

FIRMS MERGE—Here J. McKenny Willis, Jr., of J. McKenny Willis & Son, Inc., Easton, Md., and John E. Burris, Burris Processing Co., Milford, Del., shake hands following merger of their two firms into one of the larger integrated independent operations in the poultry industry. According to the announcement the merger will bring under one management production for hatching, feeding, grain handling and dressing of 15 to 20 million broilers a year. (Feedstuffs, April 8, page 1.)



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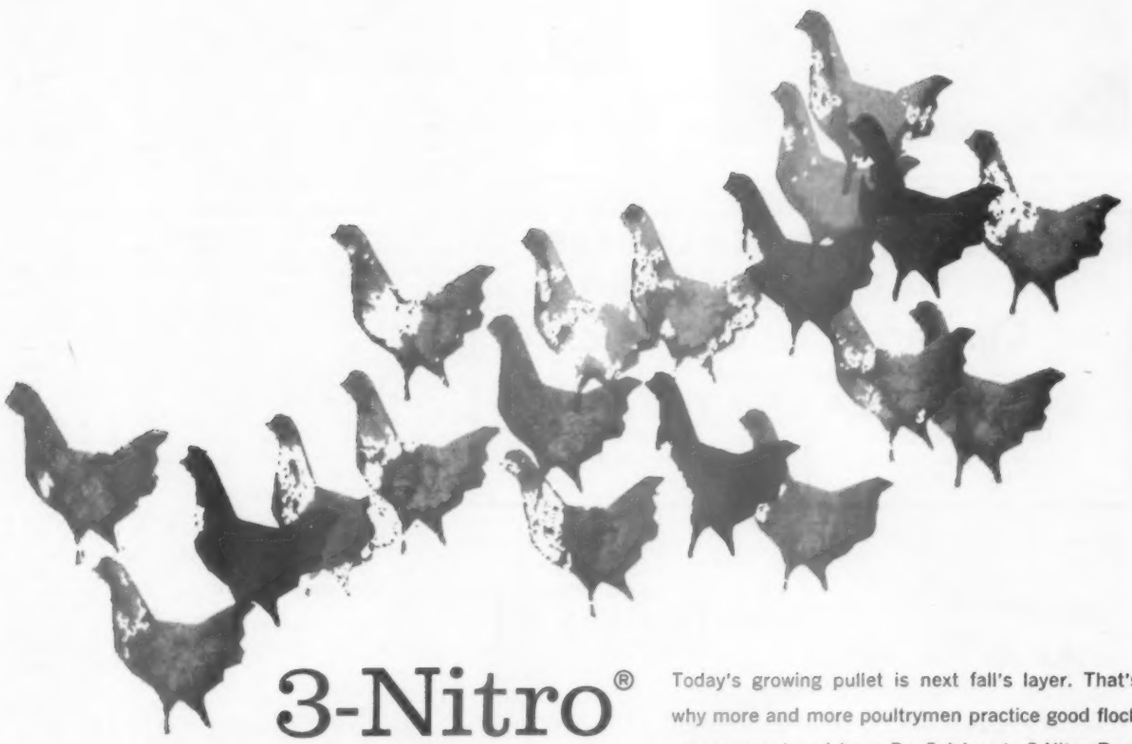

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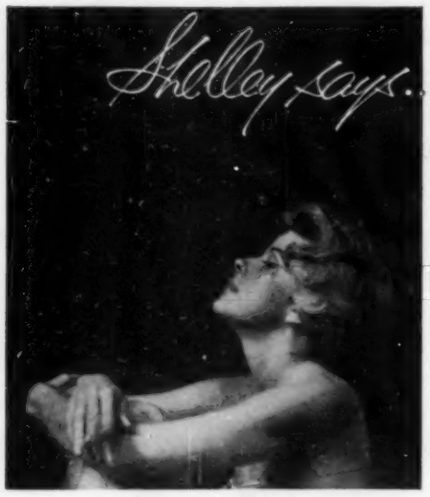

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Indiana Organization Gets High Feed Tonnage From Broiler, Turkey Contracts

By Al P. Nelson
Feedstuffs Special Writer

Broiler growers buy approximately 10,000 tons of feed annually from the Elkhart County Farm Bureau Cooperative Assn., Inc., Goshen, Ind. Turkey growers buy about 7,500 tons of feed. This tonnage, plus feeds for breeder flocks, laying hens, beef cattle and swine, keeps the firm's feed manufacturing plant operating on three eight-hour shifts six days a week during summer months, says Ray M. Gardner, mill manager.

In addition, the cooperative has custom mills at Bristol and Nappanee, Ind. Thus turkey and broiler raisers can buy complete feed manufactured at Goshen, or include their own grains in the feeding process.

Contract Agreements

One reason why this cooperative has a large broiler and turkey feed volume is that many growers are under contract. For example, 80% of an annual 2,250,000 broiler production served by Elkhart cooperative is under contract, according to John C. Reed, poultry department manager. About 90% of a 200,000 annual turkey production is also under contract. The Elkhart cooperative has been sponsoring broiler and turkey production for the past seven years, reports Mr. Reed. The company has contracted production for three years.

Broiler contract raisers furnish housing and equipment. The cooperative furnishes chicks, feed and medication. The grower receives 5¢ per chick labor charge and he also gets a fuel allowance.

In addition, growers are eligible for a performance efficiency rating bonus which can amount to 14¢ per bird, depending upon the management of the growers and the results they obtain, states Mr. Reed.

At the end of the contract year, if there is a profit in a grower's account, he gets all the profit. "This means we have a contract which gives the grower a great deal of independence," says Mr. Reed, "and this appeals to many customers."

The cooperative hatches most of its own chicks at Goshen where the hatchery is under the supervision of Vic Gardner. Approximately 45,000 broiler chicks are hatched every week the year around and furnished to growers. Some broiler chicks are purchased elsewhere when needed.

10,000 Bird Average

The average size of broiler flocks under contract approaches 10,000 birds, but some flocks vary from 4,000 to 30,000, states Mr. Reed. Practically all broiler growers handle four runs per year.

To earn a full time living, the average grower needs to have 30,000 birds annually, reports Mr. Reed. Vic Gardner, himself, raises 5,000 broilers each batch. About 80% of the cooperative's contract growers do general farming. About 20% of the growers work in town and care for broilers mornings and evenings and get help from the family. The Elkhart hatchery furnishes growers with the chicks from the Nichols 108 female hen and Brown's LedBrest cockerels.

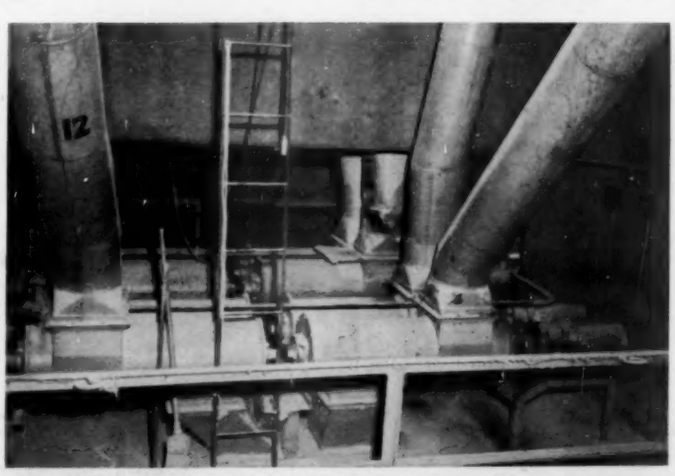
Two full time service men visit Elkhart growers once a week, or oftener if needed, to help them with feed, housing or other problems. Each service man fills out a comprehensive report on each call. This information is kept in Mr. Reed's office so that he can quickly size up individual operations and map out remedial procedures when trouble arises.

One grower achieved an 11.86¢ per pound cost on feed, chicks and fuel (no depreciation) for the best rate on an Elkhart flock in 1960, says Mr. Reed. The average cost of growing broilers on cooperative contracts is about 14-15¢ per pound in winter and lower in summer. All Elkhart flocks, under all conditions, had a 2.48 conversion rate on a 3.59 lb. bird in 1960.

Some birds in broiler flocks are lost during December, January and February, due to winter conditions and CRD, Mr. Reed reports. In cold weather, some growers may have heating trouble or may restrict ventilation too much.

Despite winter conditions, one open account grower in January, 1961, who

PRODUCTION RECORDS—Production records are being studied in this photo which shows John Reed, left, poultry director for the Elkhart County Farm Bureau Cooperative Assn., Inc., Goshen, Ind., checking records with one of the firm's growers.



INTAKE SPOUTS—Second floor intake spouts for the Richardson batching system at the Elkhart County Farm Bureau Cooperative Assn., Inc., Goshen, Ind., are pictured here.

FARM BUREAU MILL—Here's an exterior view of the Elkhart County Farm Bureau Cooperative Assn., Inc., feed mill at Goshen, Ind. The firm makes all its feed here and owns a custom mill across the street to the left in the photo.

housed 10,000 birds, made 17¢ per bird profit on a 15½¢ market. "This proves," Mr. Reed says, "that management is an important factor in broiler operations. There are considerable variations now and then in broiler flock management. However, the longer a broiler grower sticks with us, the better management principles he uses due to regular help and counsel from our service men."

Elkhart broilers are sold to two large processing firms in the state, says Mr. Reed. Because of marketing knowledge and cooperation, Mr. Reed got an average of 17.49¢ per pound during 1960 for birds sold.

Roasters, Too

Elkhart broiler growers are counseled at certain seasons on the advisability of raising roasters from part of the broiler flock. For example, it may pay a broiler grower to sell half of a 10,000 flock at 9-10 weeks, and raise the other 5,000 to roasters at about 5¾ lb. It requires 15-16 weeks to finish roasters. Growers who decide to raise roasters get 1.4¢ per bird from Elkhart after the 9-10 week broiler period. Mr. Reed says that his firm and processors prefer pullet roasters.

Why should broiler growers prefer to operate under the Elkhart contract plan rather than remain totally independent? One reason, according to Mr. Reed, is that the cooperative has much wider marketing knowledge and more contracts than the individual grower and thus is able to get highest prices. The independent grower sells only three or four times a year, whereas the cooperative sells 52 times a year and accumulates much marketing experience.

"Our management is a great aid to the grower," Mr. Reed explains. "We shift him to roasters when the market indicates this a profitable move. The grower can't do this himself, for he doesn't study the markets as much as we do. By working with us, he receives the benefits of our disease prevention and control program, plus service and flock advice."

Layer Contracts

Layer contracts are only pilot projects at the present, says Mr. Reed. The cooperative is experimenting with layers, accumulating experience for future programs. Cooperative producers under contract raise from 2,000 to 9,000 layers. The producer furnishes housing and equipment. The cooperative furnishes chicks, feed and medication. Egg producers get 6¢ per dozen on large Grade A eggs. All eggs under that grade get 3¢ a dozen. The average cost of producing eggs in 1960 on Elkhart contracts ranged from 21 to 27¢ per dozen, depending on season and rate of lay.

The cooperative sells the eggs to produce houses which pick up the eggs at farms, candle them and grade them. Checks are sent to the coopera-

BROILER BUSINESS—John Reed, left, poultry director for the Elkhart County Farm Bureau Cooperative Assn., Inc., at Goshen, Ind., is pictured here with Vic Gardner, hatchery manager, checking over a shipment of chicks that will go to one of the firm's broiler growers.

BATCHING SYSTEM—An employee operates the Richardson batching system at the Elkhart County Farm Bureau Cooperative Assn., Inc., Goshen, Ind.

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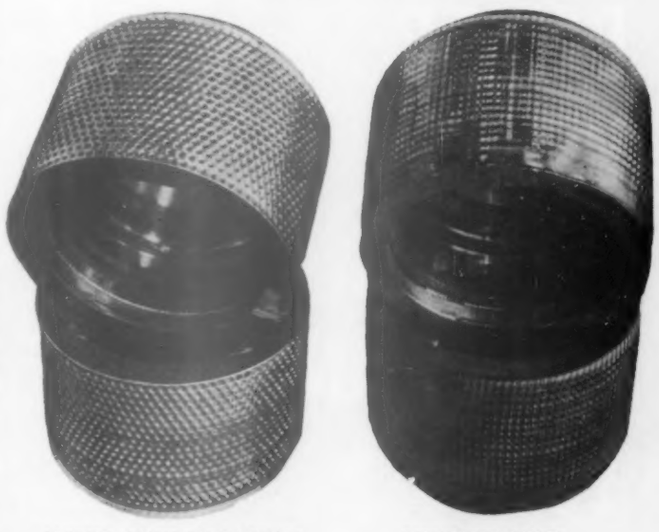

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. . . the conclusion is simple. The corrugated rollers on the right have started to wear on the outside edges which means that the die has stopped pelleting through the outside holes. The Landers Dimple-Faced rollers on the left are still able to deliver many more tons of pellets. Shouldn't you make this comparison in your own mill?

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tive which in turn distributes the money to parties involved.

Breeding Flock Program

The cooperative also has a breeding flock program and owns 25,000 laying hens on contract. The hatching egg producers are given 15¢ per dozen on a 70-75% hatch, 16¢ on a 75-80% hatch, and 17¢ per dozen on an 80% or over hatch. The breeding flock producers are also paid a 5¢ per dozen premium for market eggs.

Mr. Reed reports that the company's turkey contract has a base pound guarantee of 2¢ on hens and 1¼¢ on toms. In 1961, the tom turkey rate will increase to 1¾¢ because toms take longer to raise and eat more feed.

The turkey grower also gets an additional ¼¢ if the feed conversion on the whole flock is 3.6 or less. The cooperative furnishes the fuel on turkey contracts as it does on broilers. Litter is also furnished and the cooperative debeaks the birds as well.

"On a production of 200,000 turkeys in 1960, the overall feed conversion was 3.74," states Mr. Reed.

Hog Contract

The cooperative also has several hog projects on an experimental basis. Farmers who sign such contracts are furnished 40-50 lb. feeder pigs. After marketing, the cooperative gets paid for the feeder pig and the feed and the grower takes the profit.

"There is a no loss basis guarantee on the hog contract," reports Mr. Reed. "We've got about 1,000 pigs on contract now. Again, as in the layer projects, we are accumulating experience and perfecting know-how in the projects."

The firm's feed mill at Goshen was erected in 1952. It is a one-man operation. There is a 60,000 bu. grain storage capacity on the premises. Farmers who have grain to sell to the cooperative gets 8¢ over the market. This amount is then credited against their feed account.

"By this method we can accommodate the farmer who has his own grain, or part of it," says Mr. Reed. "We can also supply a grower with complete feed."

Ray M. Gardner, manager, says that the mill has a capacity of 100 tons per eight hour day. Equipment includes a 75 h.p. Bryant hammermill with 40 h.p. blower, and two 3-ton capacity Sprout-Waldron mixers. There is a 100 h.p. California pellet mill on the second floor with crumblizer and cooler on the first floor. A 50 h.p. Dutton boiler in the basement furnishes steam for pellets. A Richardson batch scale with a 2-ton hopper is used for selecting and weighing ingredients. The mill also has Richardson bagging equipment. There is molasses storage outside the mill.

The plant has 26 round metal bins, all inside the structure. Twenty of the bins hold 25 tons each, six of which are for loading. Six other bins hold 1,500 bu. corn each. All bins are controlled from the work floor.

NUTRITION TALK—Russell Weldy, left, feed delivery man for the Elkhart County Farm Bureau Cooperative Assn., Inc., Goshen, Ind., is pictured here talking nutrition with one of the firm's growers, Joe J. Rohrer.

About 95% of the feed production is in bulk, reports Mr. Gardner. For bulk delivery the firm has four trucks. Two 6-tonners are Baughmans, and so is one 10-ton truck. One truck is a 6-ton Delphi. The Bristol branch has a 6-ton Pamco bag or bulk truck, and the Nappanee plant has a similar Baughman unit.

There is no charge for delivery of feed up to a distance of 25 miles, states Mr. Reed. Beyond the 25 mile limit, the delivery charge is $2 per ton.

"Our grower contracts help provide our mill with a steady flow of feed orders most months of the year," Mr. Reed says. "This constitutes a large volume of feed that we can count on and schedule production accordingly."

W. P. Hays Retires From Ralston Purina

ST. LOUIS — W. P. Hays, advertising director of the Ralston division for the Ralston Purina Co., has retired after 36 years service with the company.

W. P. Hays

Mr. Hays graduated from the University of Missouri College of Agriculture in 1922 and was a member of its faculty until 1925 when he joined Ralston Purina as a dairy field man. He joined the company's advertising department in 1927 as copy writer, became business manager of the department in 1932 and assistant director of Chow advertising in 1951.

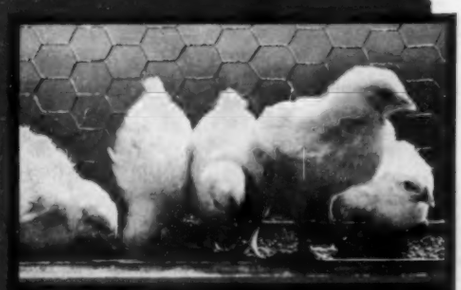
He was appointed to his present position in 1956. A successor to Mr. Hays will not be announced for some time. Robert L. Eskridge, cereals advertising manager, will assume additional responsibilities as acting director of advertising and promotion for the Ralston division.

S.D. Mill to Open

ELLIS, S.D.—The Farmers Union Grain Terminal Assn., St. Paul, will hold a grand opening May 3 for its new feed mill here, west of Sioux Falls.

The facility, called one of the largest in the Midwest, will produce 30 tons of feed an hour with a labor force of 12 men.

LET RESULTS DECIDE WHICH GROWTH STIMULANT YOU SHOULD USE...



When a growth stimulant gives you increased weight in *marketable* birds worth many times its initial cost, you really can't afford not to use it. And when that same growth stimulant additionally produces an increase in feed efficiency, then it's a good investment, indeed!

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Increase Your Profits 3 Ways!

GALLIMYCIN-10 is effective at low levels, it produces greater marketable weight, and it makes feeds go farther... three ways to bigger profits! Increased profits from GALLIMYCIN-10 have ranged from $29 to $46 per 1,000 birds... *extra* profits above feed and feed additive costs!

GALLIMYCIN-10 Has Been Proven Better

GALLIMYCIN-10 has been field tested and proven in every major broiler area in the country. In scientific studies at agricultural colleges and experiment stations*, growth improvement in flocks receiving GALLIMYCIN-10 averaged 5.8%. Yet, it takes *less than 1% improvement in growth to pay for GALLIMYCIN* at the recommended level of 5 grams per ton of feed. And... GALLIMYCIN-10 increased feed efficiency at the same time. In one trial, feed efficiency was 7.4% higher in the flock receiving GALLIMYCIN-10 than in the control flock.

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GALLIMYCIN-10 can be fed continuously, right up to the day of marketing. It's manufactured under the rigid standards of Abbott quality control, supplied in a free-flowing premix with a soybean oil meal carrier, and carries a two-year expiration date! GALLIMYCIN-10 is safe, proven... there are no special registration requirements.

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Heisdorf & Nelson Names Appointees

KIRKLAND, WASH.—Albert Carter has been named acting franchise department manager for Heisdorf & Nelson Farms, Inc., Kirkland, according to announcement by Art Heisdorf, president, and Gerald Cruea, general manager.

Mr. Carter, central region franchise representative, will replace Dale Schlotzhauer, who is on temporary assignment in Europe to help develop the European franchise program in association with Heisdorf-Nelson-Lohmann, Inc., of Cuxhaven, West Germany.

Mr. Carter will operate from the firm's home office in Kirkland. He came to H & N in January, 1959, from California Polytechnic College, San Luis Obispo, where he was on the teaching staff of the poultry department. Mr. Schlotzhauer joined the H & N sales and service department in 1956. He was named franchise manager in 1957.

H & N further announces that Marvin Sickles has been named a central region franchise representative for the firm.

Mr. Sickles is a former county extension agent and at one time was associated with the Western Farmers Assn. Immediately prior to joining H & N, he was a partner in a commercial company handling agricultural commodities.

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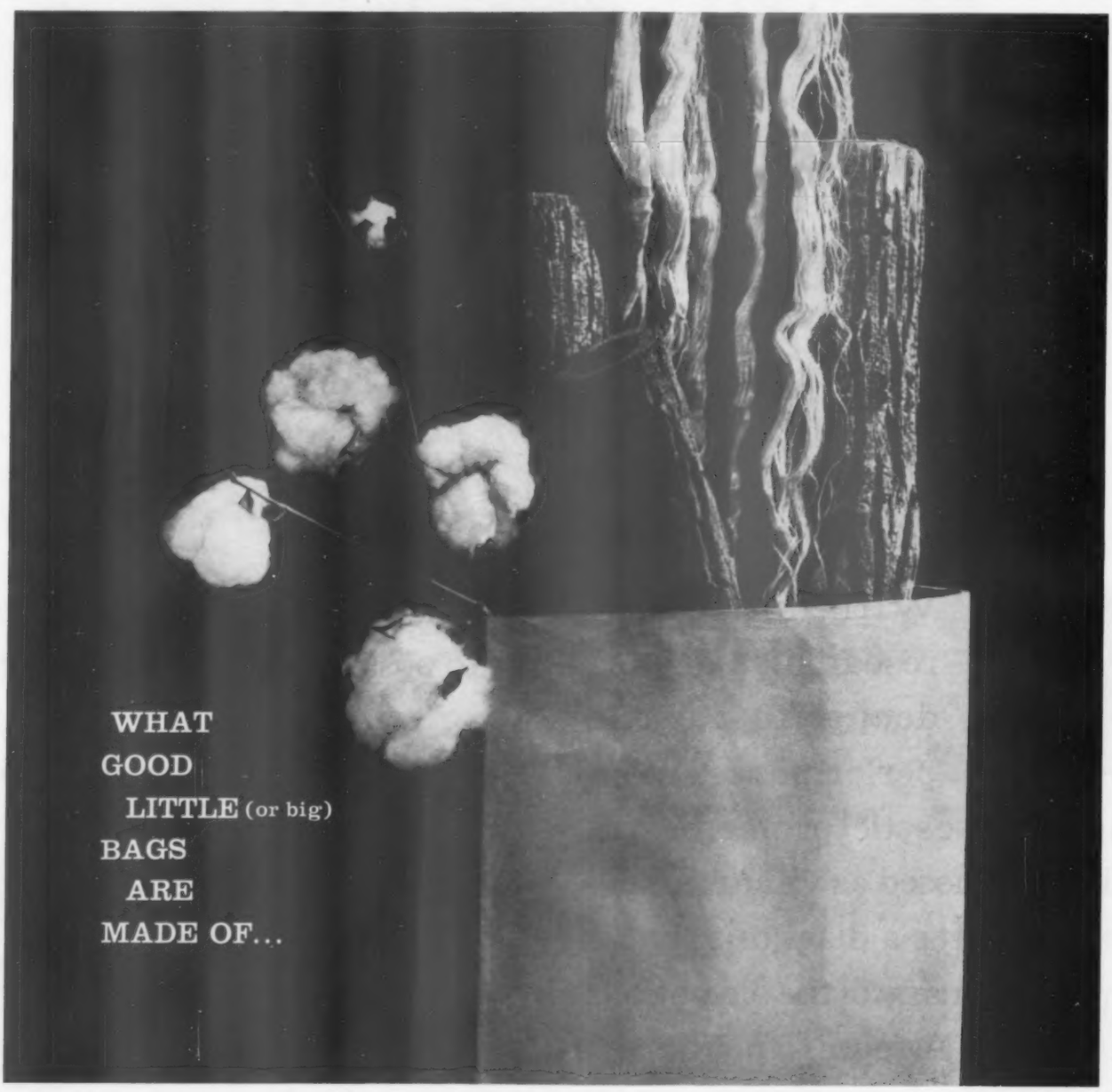

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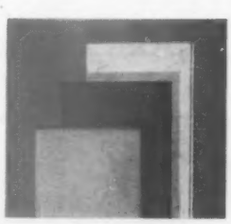
A full line of bags is another example of St. Regis *Packaging-in-Depth*. This complete bag service assures you of the *right* bag, the *right* machinery to pack it, plus the services of a highly-skilled engineering staff. To meet your *future* needs, our *Packaging-in-Depth* program also includes continued research to develop improved packaging methods and economies.



PACKAGING-IN-DEPTH BY St.Regis BAG DIVISION
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What's behind the recently discovered shortages of Vitamin A in beef?

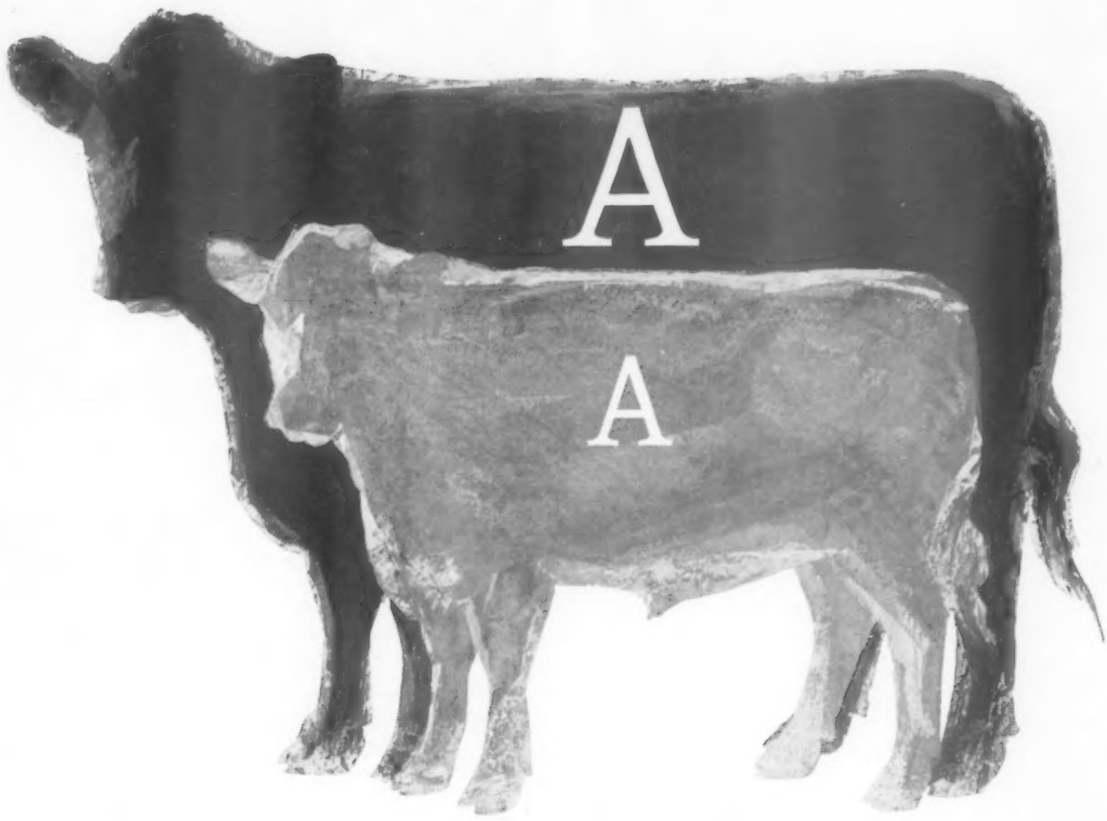
With nutritional researchers digging deeper into cattle performance, more and more cattle problems are being diagnosed as vitamin A deficiencies. It's a diagnosis that is exploding many of the old notions on vitamin A requirements.

For instance, Illinois studies showed that beef animals on rations supposedly adequate in vitamin A sources came up seriously deficient.

From this study and many others, several theories have been proposed by leading nutritionists as to possible causes of shortages:

- *Less reliance can be placed on the carotene content of forage and other feedstuffs as well as the efficiency of conversion by cattle.*
- *Recommended levels of vitamin A in the past may not have been high enough to supply the optimum growth performance.*
- *High temperatures can increase vitamin A requirements.*
- *Phosphorus deficiencies may lower carotene conversion efficiency.*
- *Nitrates in corn silage or hay apparently reduce carotene utilization.*
- *Previous vitamin A nutrition affects the efficiency of carotene conversion.*
- *Carotene disappears fast from wet corn. Old corn also may be short of carotene.*

Research is continuing in order to discover the exact cause behind these problems.



...and how to make sure your feeds supply enough

A recent article in *Feedstuffs* on an Iowa Field Day, for example, quotes a leading beef nutritionist as recommending feeders insure the performance of their ration with supplemental levels of vitamin A. An extra $1-$1.50 cost per ton would make sure there was enough vitamin A present without worrying about the conversion of carotene to vitamin A.

High-quality supplements can't work if animals are held back by unexpected vitamin A shortages in other feedstuffs and forage.

USDA studies, for example, show that from 75-90% of the carotene content of alfalfa hay and silage may be lost before feeding. And carotene conversion may not be as high as it has formerly been considered.

An Illinois study shows that preformed vitamin A was at least twice as efficient as the carotene in alfalfa meal in restoring blood and liver vitamin A of deficient calves.

Only a few of your customers can be expected to determine how much carotene activity there is in forage, corn, or other feedstuffs they're using to fill out the ration when using your supplements.

The insurance you can put in your supplements with vitamin A costs only pennies per head for a full three months . . . mighty economical insurance that your feeds are performing up to their full potential.

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. . . the one with highest purity, availability and stability under all types of beef feeding and storage conditions.

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Because the particles are so small they're absorbed rapidly, unlike many other types of vitamin A.

Added together, it's a great combination of advantages. Call your Pfizer representative.

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SOURCE OF THE BEST — FOR MAN'S BEST FRIEND

HORSE NUTRITION MEETING—A group that met in Denver recently to draft research needs in the field of nutrition for the horse are pictured here. From left to right are Dr. R. M. Forbes, University of Illinois; Dr. Mark L. Morris, Denver; Dean Rue Jensen, Colorado State University; Dr. John K. Loosli, Cornell; Dr. Imogene Earle, U.S. Department of Agriculture Research Center, Beltsville, Md.; Gen. Wayne O. Kester, Denver, and Ed H. Honnen, Denver.

Draft Research Needs For Horse Nutrition

DENVER, COLO. — The research needs in the field of nutrition for the horse were drafted recently by a group of veterinarians, animal nutrition specialists and horsemen, meeting in Denver.

The meeting was under the joint sponsorship of the Morris Animal Foundation of Denver and the American Quarter Horse Assn.

In a two-day session, the guidelines for a broad research program were drafted. Considered were such problems as the measurement of digestibility of common feeds; development of a purified diet; a study of the physiology of the digestive system; the biological evaluation of protein; determination of energy, mineral and vitamin requirements; the effect of nutrition on growth; and the evaluation of nutrition in reproduction.

Attending the meeting were: Dr. Imogene Earle, animal nutrition specialist of the U.S. Department of Agriculture Research Center, Beltsville, Md.; Dr. R. M. Forbes, professor of animal nutrition, University of Illinois; Ed H. Honnen of Denver, chairman of the American Quarter Horse Assn. research committee; Dr. Rue Jensen, dean of the School of Veterinary Medicine, Colorado State University; Dr. John K. Loosli, professor of animal nutrition, College of Agriculture, Cornell University; Dr. Mark L. Morris, president of the Morris Animal Foundation; and Gen. Wayne O. Kester, director of professional education of the Morris Animal Foundation.

CSC Reports Nutrition Product Sales Up

NEW YORK—A sales advance for zinc bacitracin antibiotic products to the animal feed industry was noted by Commercial Solvents Corp. as part of its 1960 annual financial report.

An expanded marketing program was launched in 1960 to broaden sales of these items for animal nutrition, M. C. Wheeler, CSC president, said in the report.

He also reported that Silotracin, a zinc bacitracin product for the palatable preservation of silage, was well received following its introduction early in 1960.

He also reported that sales of CSC's choline chloride rose as animal nutritionists recommended greater use of this fat metabolism vitamin in swine and poultry feeds. Greater production was said to have been made possible through the increased output of trimethylamine, the methanol derivative which is choline's raw material.

Net sales of $62,337,053 for 1960 were reported in the CSC annual report. Net earnings totaled $4,839,815, or $1.70 per share of stock. In 1959, sales totaled $70,381,175, and net earnings were $2,850,740, or $1 per share of stock.

Mr. Wheeler said that the firm's 1960 net earnings were the highest since 1951.

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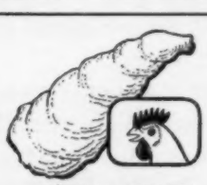

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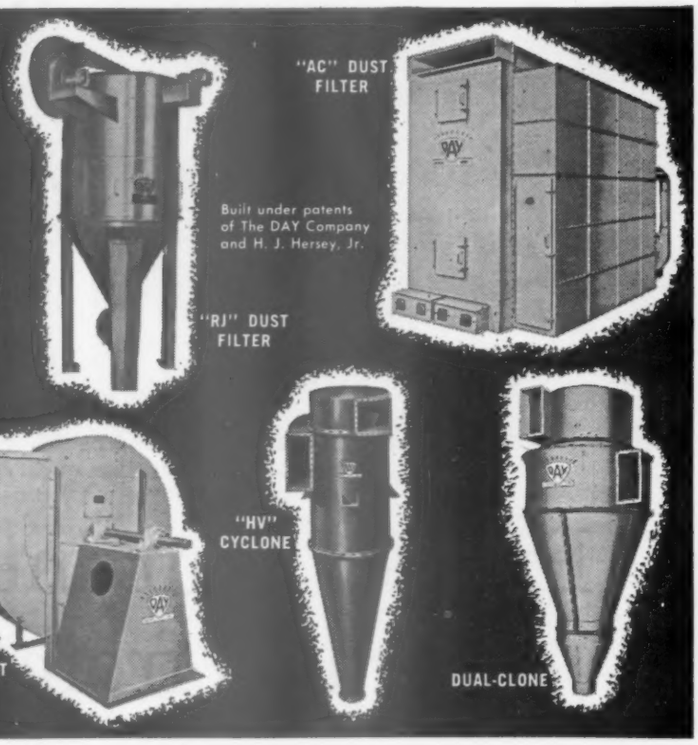

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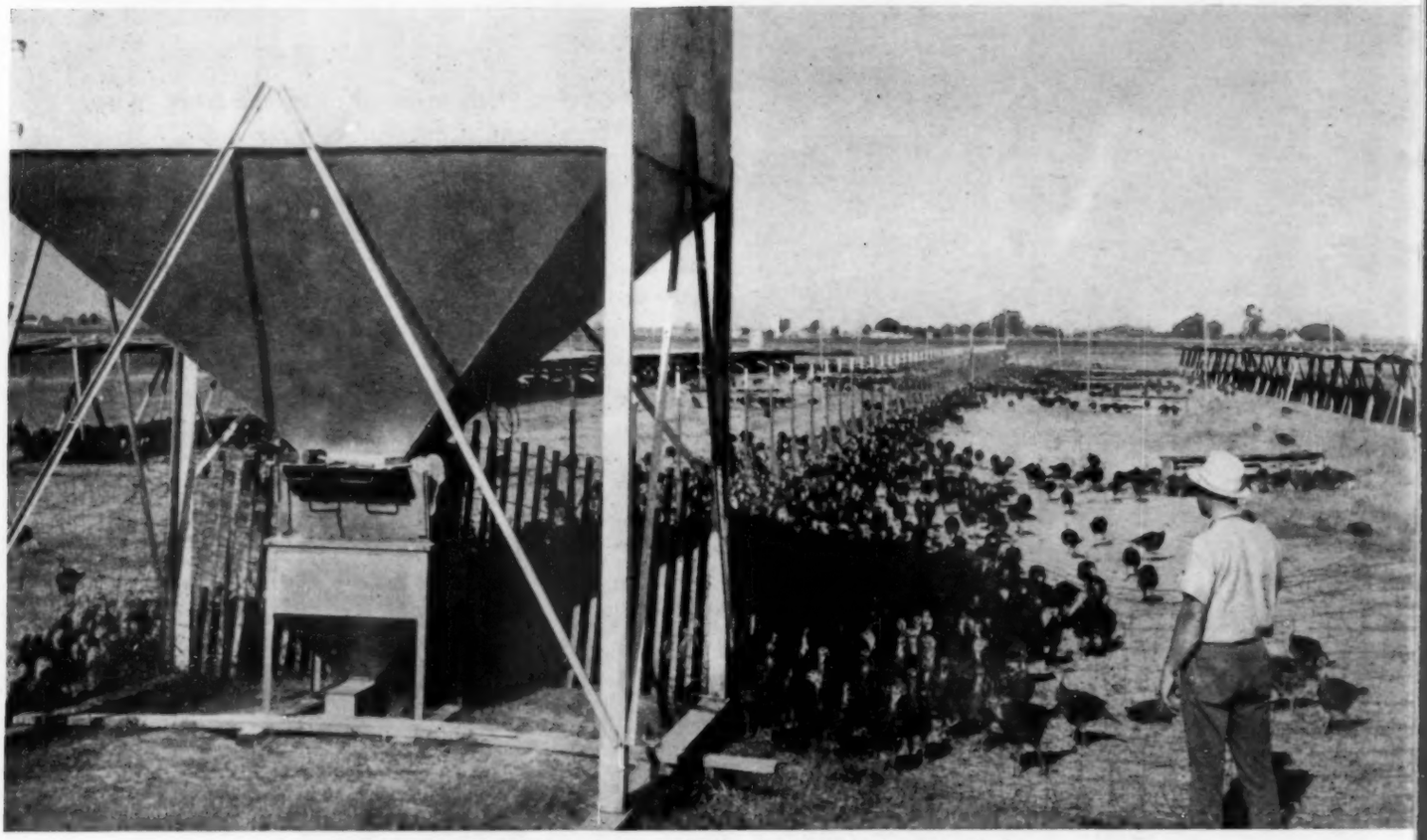


Elwood Swanson, Turlock, Calif., feeds nf-180 to 150,000 market turkeys with "excellent results."

Protect your interest in turkey contracts from start to finish

REPORT ON nf-180 PROTECTIVE FEEDING FOR MEAT BIRDS

If you're financing turkeys, you have an important stake in those birds until they reach the processor. And many things can threaten your interest. Subclinical infections, for example, can be a constant drag on performance. And there is always the chance of a disease outbreak. If a disease outbreak should occur, your customer is in for serious losses from stunting and reduced feed efficiency . . . even if he manages to treat in time to hold down mortality. With nf-180 protective feeding, you protect your customers (and your financial interest) against severe losses. This report tells how.

KEITH LANGMO, a Paynesville, Minn., feed dealer (he's pictured on the opposite page) says: "Without any question, nf-180 is the best single drug for turkeys . . . and it saves a few ulcers for me, too."

The reason nf-180 saves ulcers for Keith Langmo is because it *protects his investment in financing turkeys.* It reduces his risk . . . increases his peace-of-mind. As Keith Langmo says, "When you get disease in a house, you run the risk of it spreading throughout the whole flock. Any time you can do anything within economic reality to reduce that disease problem, you're doing something real good. Many times we'd take a real licking if we didn't have it."

In addition to reducing risk, nf-180 protective feeding makes for happy customers by *improving feed performance.* It reduces early mortality, gets birds off to a faster start, improves feed efficiency.

The principle behind nf-180 protective feeding is this: nf-180 prevents and controls an extremely wide range of turkey diseases — more turkey diseases, in fact, than any other drug. It protects against typhoid, pullorum, paracolon, paratyphoid, C.R.D., blue comb, hexamitiasis, synovitis, ulcerative enteritis and blackhead.

In addition, nf-180 cleans out the intestinal tract . . . clears up the many hidden stresses and subclinical infections that hold everyday feed performance down. It prevents constant disease drag from building up and triggering serious troubles. In most cases, a regular nf-180 protective feeding program costs your customers far less than treating troubles as they occur. You'll benefit, too, with fewer service calls and fewer complaints.

Here's what to do: Add nf-180 to your starting mash at a rate to provide 100 grams furazolidone per ton of total ration. Recommend this nf-180 fortified ration throughout the starting period — including the first week on range.

Then, it is equally important to see that nf-180 protection is continued during the growing-finishing period . . . because if you are financing turkeys, that's when you have considerable money tied up in feed.

During this period, though, we don't feel we can make a specific feeding recommendation covering all situations. The need for nf-180 protection varies from farm to farm and area to area. You can recommend an nf-180 protective program to fit the individual feeder, based on local past history and disease problems. Here are 3 programs that are used successfully by many feed men.

• Where blackhead, hexamitiasis, paracolon, and paratyphoid are problems, a 2-lb-per-ton level of nf-180 (100 grams furazolidone) fed continuously gives dependable results.

• Where blackhead, hexamitiasis, paracolon and paratyphoid are not likely problems, a 1-lb. level of nf-180 (50 grams furazolidone) protects against stress setbacks and a wide range of other diseases.

• Where disease is not a constant threat, growers report good results using the nf-180 week-a-month plan. A ration containing 2 lbs. of nf-180 (100 grams furazolidone) — fed 1 week out of 4 — cleans up birds, fights stresses, knocks out disease organisms before they can build up and cause trouble.

When your servicemen are called out to farms to check on flock troubles, nf-180 should be the first drug they turn to if they suspect something is wrong. nf-180's wide-range effectiveness stands the best chance of stopping the trouble. Even when the major problem is diagnosed, it is important to remember that diseases seldom attack singly. nf-180 — in addition to stopping the primary trouble — is also effective against a host of secondary problems.

The best way to predict how your customers will like nf-180 protective feeding is

John Ash's son, Bob, was this year's Reserve Sweepstakes winner at the National Dressed Turkey show.

to see what present users say about it. In these excerpts from tape-recorded interviews, nf-180 users answer some common questions about protective feeding:

How do you use nf-180 for best results?

WALTER SCHWEDLER, Portland, Oregon, hatcheryman, uses the following nf-180 program for the 65,000 birds he grows out himself . . . and also recommends it to his poult customers: "The first 10 days, we start poults on a prestarter containing a 2-lb. level of nf-180. Then we go to a 1-lb. level through the rest of the 7 to 8-week starter period, making sure we leave the nf-180 in until the birds settle down on range. After that, we use a periodic once-a-month feeding."

JOHN ASH, Ashkum, Ill., is a 25-year veteran in the turkey business. He says: "It is absolutely essential that our starter feed contain nf-180. We feed the 2-lb. level continuously for the first 8 weeks. After that, we feel you can delete it for short periods if you're careful to observe the birds and conditions. If you see trouble approaching, get nf-180 back in there again."

Does nf-180 live up to its claims?

ELWOOD SWANSON, owner of Westlock Turkey Breeding Farms, Turlock, Calif., grows out 150,000 turkeys a year in addition to raising 12,000 to 16,000 breeders. He replies: "nf-180 works! It must work, because we're getting excellent turkeys. I feel nf-180 is doing a real swell job for us."

DON AND JERRY WHARTON, partners in a Sacramento, Calif., turkey hatchery, recall: "One of your representatives told us about nf-180. He said it was something that was going to help all of us. At the time, we thought it was just salesmen's enthusiasm. But the following year we tried it on a small scale. It was so effective we now recommend nf-180 to all our customers. I'd say 90% of the 1,200,000 poults we put out are started on nf-180."

What specific benefits have you noticed from nf-180?

KEITH LANGMO, who you met on the opposite page, says: "nf-180 keeps birds in condition. It helps them build up resistance. It makes the bird stronger. Keeps the bird healthy. Keeps the intestinal walls in condition so the birds can absorb the nutrients."

How does nf-180 compare with other drugs?

PAUL BANDEL, Rochester, Minn., has raised 4,000-5,000 turkeys a year for 31 years. He says: "There are many good drugs, but I would definitely say nf-180 is one of the very top products put out to help turkeys."

KEITH LANGMO adds: "I would say that, without any question, nf-180 is the best single drug for turkeys. If I had to pick the one drug that did the most for our operation, I'd pick nf-180."

Hatcherymen Don and Jerry Wharton report 90% of their customers start their poults on nf-180.

How do you feel about the cost of nf-180?

DON AND JERRY WHARTON: "Why, compared to what a fella could lose, the cost of nf-180 is nil. It's just nothing!"

Keith Langmo says: "nf-180 keeps the birds in condition . . . and it saves a few ulcers for me, too."

PAUL BANDEL agrees. He says: "Some people ask, 'Why do you use nf-180? That costs money.' Well, I say, 'nf-180 has paid off in dollars and cents.' I have to foot the bills, and I'm convinced nf-180 does pay and pay good!"

How would you like to raise turkeys without nf-180?

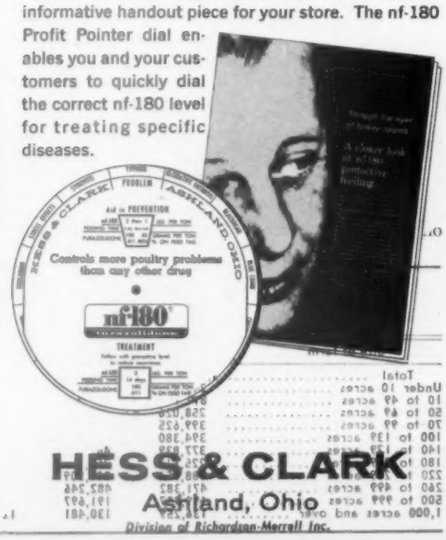
KEITH LANGMO: "I wouldn't like to. I imagine I could, but it would make our job more difficult. nf-180 is one of the things that make your job a little easier."

PAUL BANDEL: "I'd hate to raise turkeys without it! I feel more relaxed . . . less helpless with nf-180 in my feed."

Get in touch with your Hess & Clark salesman. He can answer any questions you may have . . . and can get you started on an nf-180 protective feeding program.

These informative selling aids help acquaint customers with nf-180 protective feeding

By starting an nf-180 protective feeding program now, you'll profit from powerful selling support. The 4-page folder shown here is currently running as an insert in leading turkey magazines. It also makes an informative handout piece for your store. The nf-180 Profit Pointer dial enables you and your customers to quickly dial the correct nf-180 level for treating specific diseases.



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Ashland, Ohio
Division of Richardson-Merrell Inc.

NT-1-2

Analyses of 1959 Census Tell Where Feed Industry Stands in Radically Changing Farm Scene

Fewer but larger . . . fewer but larger . . . fewer but larger.

Those words must be used over and over to tell the results of the great changes U.S. agriculture has gone through because of ever increasing concentration and specialization. This story has been brought up to date with recent announcement of the 1959 Census of Agriculture.

This fewer but larger business isn't a revelation to the feed industry. Feed men have seen what's been going on in their trade area and they've been told about what's been happening outside their immediate scope of personal contact. But the 1959 Census of Agriculture proves that the feed man's eyesight was good and that his ears weren't tuned to rumors.

Fewer but larger farms, the census says. Very definitely. And this trend has meant fewer but larger flocks, fewer but larger herds.

The Census Bureau's summary of the census shows that changes in farms and agriculture during the past five years were greater than for any other five-year period recorded by a nationwide census.

Farm numbers dipped 23% from 1954 to 1959. In 1959 the Census Bureau counted 3,703,642 farms—the smallest number reported in any census since 1870. That figure is 1,078,774 farms under the 1954 count. In 1950 the census showed 5.4 million farms, in 1925 the count was 6.4 million and in 1900 farms numbered 5.7 million. (See Table 1.)

EDITOR'S NOTE: Data from the 1959 Census of Agriculture for each county of each of the 50 states may be purchased by interested feed men from the Bureau of the Census, U.S. Department of Commerce, Washington, D.C.

The average farm size in 1959 was 302.4 acres, twice that of 35 years ago. Land in farms declined approximately 38 million acres, or 3%, in the five years following 1954.

Census data shows that about two thirds of the decline in land in farms occurred in the 16 southern states and one third in the 21 northern states. Appoximately 6 million of the 38 million acre decrease resulted from changes in the definition of a farm; part of the decrease came from whole farms being taken completely out of agricultural production and placed in the Soil Bank, and some of the decrease resulted from expansion of urban areas and highway construction.

"No Runaway"

While changes in agriculture have been little short of spectacular in recent years, Claude W. Gifford, associate editor, Farm Journal, noted in a talk at the recent Midwest Feed Manufacturers Assn. convention in Kansas City, "It does not appear that farm size is headed for a 'runaway' in the direction of huge establishments. There will be strong forces on smaller farms to move upward in size and we can expect a steady increase in the average size of farms, but at the top of the scale there are equally strong forces to hold down farm size."

These great agricultural changes have been of great significance to the feed industry. Substantial growth in the use of nonfarm inputs is indicated by the Census of Agriculture. For instance, from 1954 to 1959 the expenditure for livestock and poultry feed increased 21%. The increase from 1939 is far greater—nearly five-fold—from $736,116,548 to $4,717,973,642. The average expenditure per farm for feed in 1959 was $1,274. Back in 1939 the average was $120. (See Table 2.)

"The interesting thing," said Mr. Gifford, "is that nearly three fourths of the 1 million farm 'loss' was in farms under 69 acres, and 70% of this decline was among small farms in the 16 southern states.

"Farms of 99 acres or more declined 10%; while farms of less than 99 acres declined 33% — more than three times as fast. Farms are getting bigger and stronger—particularly the small farms that need it most."

Mr. Gifford also noted, "The commercial farms that sell $2,500 or more gross farm products per year stayed almost stable at 2.1 million farms from 1954 to 1959. And the 'family farms,' such as the ones of 100 to 259 acres, moved up from 29.6% of the total to 32%. These are the people who are doing the farming."

New Farm Definition

It's important to remember when talking about farm numbers and sizes that the definition of farm was different for the 1959 census than it was for the 1954 census.

The new definition rules out many small agricultural operations as farms. The principal change in definition between 1954 and 1959 was raising the minimum acreage from 3 acres to 10 acres.

There was a little change in the value criteria also. Farms with less than 10 acres of productive land are now counted as farms if the sales of agricultural products for the year normally amount to at least $250.

"The change in farm definition in 1959 had no appreciable effect on the totals for livestock or crops," said R. K. Smith of the agricultural estimates division. Agricultural Marketing Service, U.S. Department of Agriculture, "because the places affected by the change ordinarily accounted for less than 1% of the totals for any state. . . .

"Even without the change in the definition of a farm, the changes in farm sizes and numbers between 1954 and 1959 were great. There was a 30% drop in the number of farms selling less than $2,500 worth of products and a 36% increase in those selling $10,000 worth of products or more." (See Fig. 1.)

About 232,000 of the nearly 1,079,000 farms "lost" in the five-year period were not counted as farms because of the definition change. Therefore, the realistic, net reduction in farm numbers was somewhere around 847,000, a drop of about 17%.

The 50% decline in farms of less than 10 acres was largely because of the definition change, Mr. Smith said. Most of the decrease from 1954 in the number of farms occurred in farms having less than 220 acres.

Specialization

Specialization in the larger farming units progressed at a faster rate from 1954 to 1959 than during any five-year period in history, Mr. Smith said. Only farms of 260 acres or more actually increased in number.

"In 1925, there were more than 63,000 farms of 1,000 acres and over in the 48 states," Mr. Smith explained. "By 1959, this number had increased to over 136,000. The number of farms 500 acres and over increased 62% during the last 35 years and now comprise 9% of the farms in the 48 states."

Mr. Gifford observed in his Kansas City talk that "the shift to greater specialization — dairy farms and chicken farms are carrying more numbers—is good business for feed manufacturers."

Census data shows that from 1954 to 1959 the number of farms having milk cows decreased 39%; farms having chickens declined 36%; farms raising turkeys declined 49%, and farms selling eggs dropped 37%.

Large Poultry Units

"The new census data provides concrete expression to the observable trend toward fewer but larger production units in all phases of poultry husbandry," wrote Edward Karpoff, government agricultural economist, in the U.S. Department of Agriculture's latest poultry and egg situation report. (See Fig. 2.)

"An important contribution of the census data on poultry is the extent to which they provide specific figures to illustrate the observable trends toward bigness, and obvious specialization," he said.

In 1959, according to the census, only 59% of the 3.7 million U.S. farms reported chickens on hand, a decline from the 75% so reporting in 1954.

"Until the early 1950's the poultry enterprise occurred on more farms than any other single enterprise," Mr. Karpoff said in his analysis, "but in the two censuses of agriculture since then, more farms reported cattle and calves than chickens. However, more farms have chickens than have dairy cows, and if the data were to indicate beef herds separately, it is probable that chicken flocks would exceed beef herds also.

"Of the 3.4 million farms reporting chickens in 1954, about 1.7 million sold no eggs, and in 1959 about 1.1 million of the 2.2 million farms keeping chickens sold no eggs. Thus, the percentage of self-suppliers is going down at about the same rate as the percentage of farmers who produce eggs for sale.

"Evidently the demise of poultry flocks is not only in the middle ranges of 200-500 layers, but also among the smallest flocks which are intended to produce eggs only for home use."

Mr. Karpoff tabulated the following 1954 and 1959 comparisons of average flock size or average production per flock (1954 figure first):

—Average number of chickens four months and older on hand on enumeration day: 110 and 160.

—Average number of eggs sold per farm selling eggs: 1,600 doz. and 3,100 doz.

—Average number of broilers raised for the year: 16,000 and 34,000.

—Average number of turkeys raised: 370 and 960.

These averages, he said, are somewhat misleading in delineating a typical commercial production, particularly in the cases of chickens on hand, eggs sold and turkeys raised.

"For example, the Census Bureau has announced that about four fifths of all turkey production was concentrated on 3,000 farms, and that between 1954 and 1959 there was a 125% increase in the number of farms with over 3,200 layers," Mr. Karpoff explained.

"The bulk of U.S. egg and poultry meat production comes from farms with flocks large enough to merit the application of specialized husbandry methods, but where the combination with other enterprises rules out the designation as specialized poultry farms."

The census, as analyzed by Mr. Karpoff, shows that specialized poultry farms—those with 50% or more of their farm product sales value from poultry and eggs—numbered 103,000 in 1959, compared with 154,000 in 1954. Specialized poultry farms, he said, were 2.8% of the 3.7 million farms reported for 1959 and 3.2% of the 4.8 million of 1954.

Feed Buying

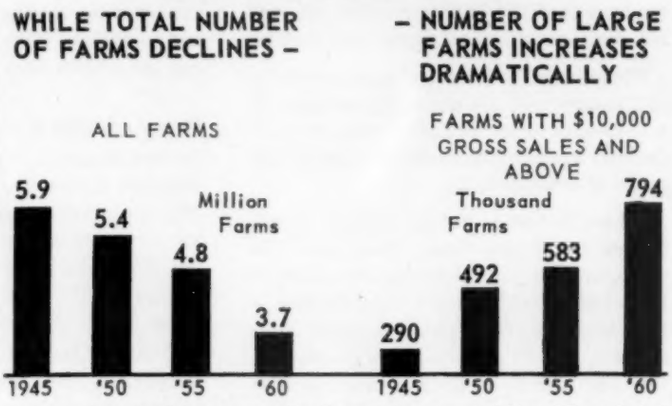
What's happening to feed buying because of this greater specialization?

"Well, take a look at Iowa," answered Mr. Gifford. "About one farm in 10 that bought feed for livestock and poultry in 1954 wasn't buying it

(Turn to ANALYSES, page 80)

FIGURE 1

Fewer But Better Farm Customers



Source: Farm Market Letter prepared by the marketing research division of Doane Agricultural Service, Inc., St. Louis.

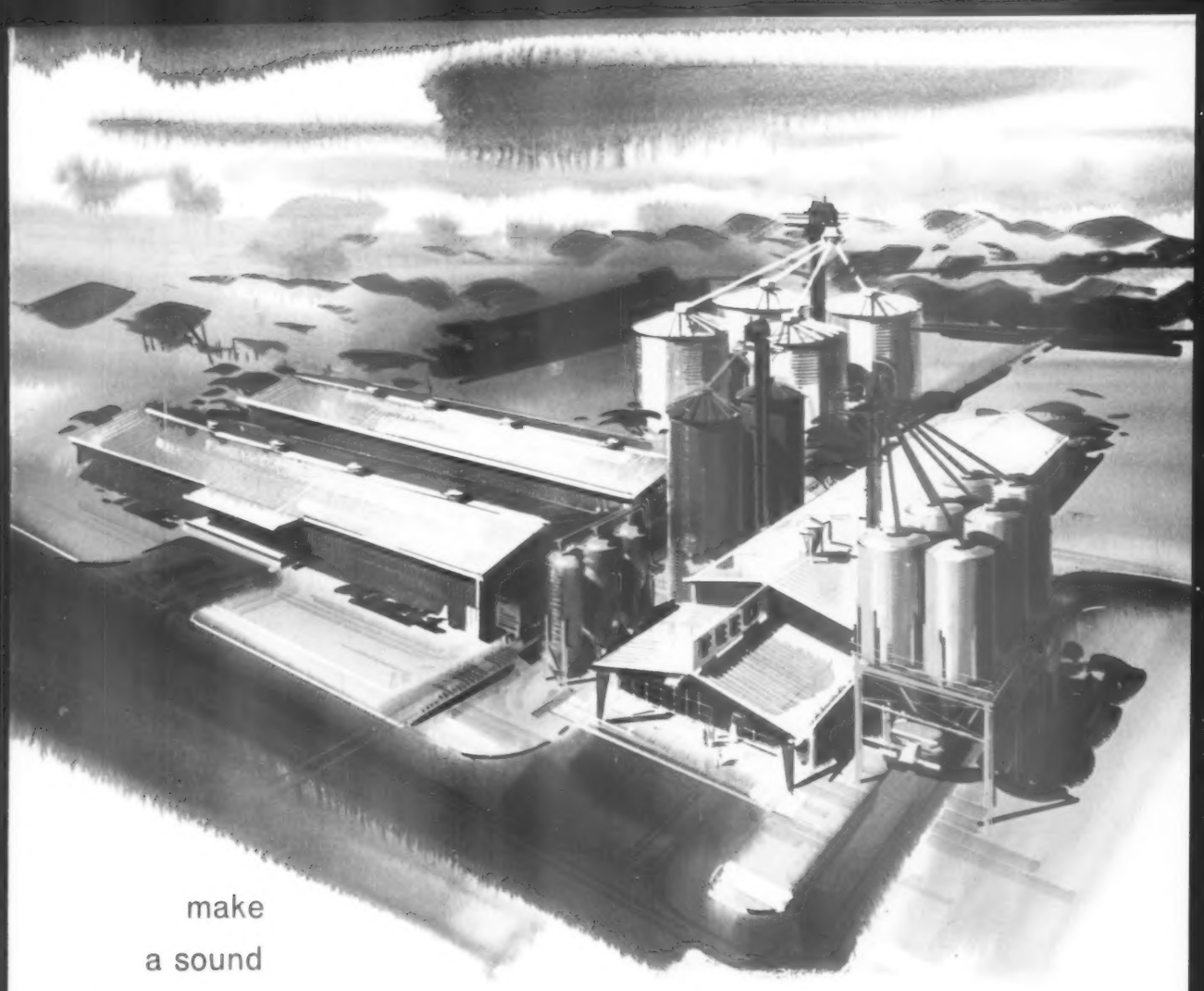
Number of farms

TABLE 1. The Change in Number of Farms of Various Sizes for Selected Census Years During the Present Century

Size of farm	1959	1954	1950	1925	1900
Total	3,703,642	4,782,416	5,382,162	6,371,640	5,737,372
Under 10 acres	240,693	484,291	484,914	378,535	267,229
10 to 49 acres	811,117	1,212,831	1,477,850	2,038,692	1,664,137
50 to 69 acres	258,026	346,323	426,887	1,421,078	1,366,038
70 to 99 acres	399,625	517,740	620,914		
100 to 139 acres	394,388	491,458	579,111		
140 to 179 acres	377,839	461,651	523,451	1,887,194	1,912,331
180 to 219 acres	225,513	267,189	275,009		
220 to 259 acres	188,851	206,509	212,316		
260 to 499 acres	471,382	482,246	478,084	438,961	377,951
500 to 999 acres	199,957	191,697	182,264	143,852	102,526
1,000 acres and over	136,259	130,481	121,362	63,328	47,160

TABLE 2. Farm Expenditures for Poultry and Livestock Feed: Selected Years, 1919-1959

Item and census year	Total	Average per farm
Expenditure for feed for livestock & poultry:	dollars	dollars
1959	4,717,973,642	1,274
1954	3,906,048,142	817
1949	3,023,840,651	562
1944	2,426,725,495	414
1939	736,116,548	120
1929	919,189,626	146
1924	750,444,560	118
1919	1,097,224,648	170



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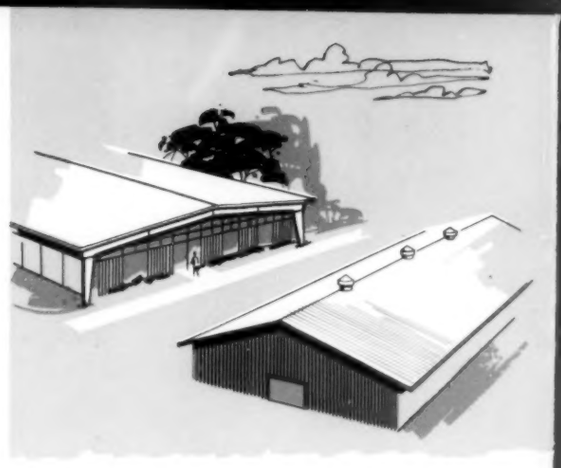
Turn the page for further details

Butler Buildings—Butler metal buildings fit every need. Want an attractive showcase salesroom? Simply specify Butler panels in beautiful, factory-applied Butler-Tone™ colors. Or if you prefer, the load-bearing rigid frame lets you use glass, brick or other materials to create decorative walls at low cost.

If you want to start more simply, Butler all-metal buildings provide excellent warehousing, big capacity grain storage or feed mixing facilities. The wide, clear-span interiors permit maximum flexibility in planning interior space. And there are no overhead trusses to interfere with stacking merchandise or conveying and mixing equipment.



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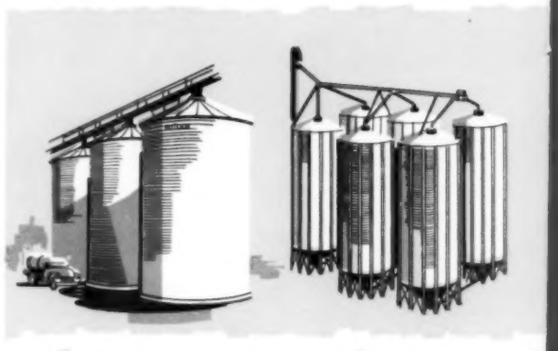
Stor-O-Matic tanks are real working bins. The hopper bottom can be equipped with a discharge auger for fast, economical grain unloading. Available in capacities from 5,845 to 9,242 bushels, Stor-O-Matic tanks are a perfect way to provide self-unloading storage facilities.



Butler Round or Square Bolted Tanks—Butler bolted steel tanks offer the finest, most dependable vertical storage for grain or feed. Round tanks are available in many diameters, heights and capacities up to 123,365 bushels. Firesafe, all-metal construction keeps insurance and maintenance costs down. Expansion is fast and economical.

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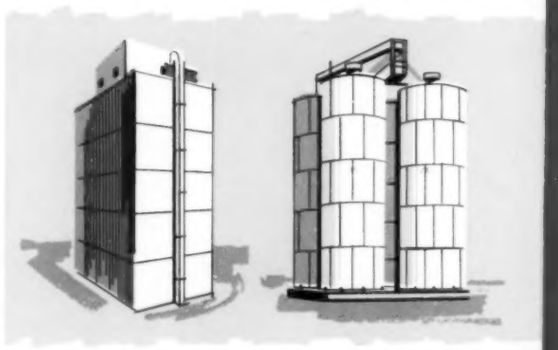

Butler Bulk-O-Matic® and Square Bins – Butler Bulk-O-Matic tanks provide ideal storage for small to medium quantities of finished feeds or feed ingredients. The new, exclusive Live-Bottom Hopper with internal auger assures fast, positive clean-out of even difficult-to-handle ingredients. Capacities from 2 to 87 tons. Square tanks in the new space saving shape make excellent over-the-drive load-out or receiving facilities. A complete package including structurals, hoppers, tanks and roof deck is available for fast, economical erection in capacities from 1 to 50 tons.

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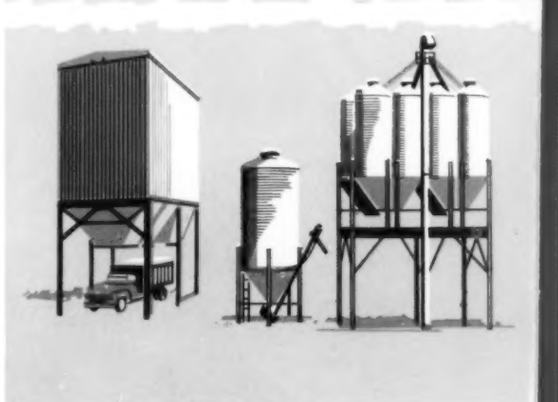

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Suggestions on Vitamin A for Cattle Offered

MINNEAPOLIS — Comments and suggestions on vitamin A supplementation of feedlot rations for cattle were presented in an information bulletin issued recently by the Occident Elevator division of F. H. Peavey & Co.

The bulletin offers some of the theories on reasons for vitamin A deficiencies and makes suggestions on added vitamin A. It quotes a report from the University of Arizona on the need for added vitamin A.

The report from Arizona, the bulletin notes, indicates that "extra vitamin A is needed in high concentrate rations such as rolled barley with limited or no roughage. It has been determined that even when dehydrated or suncured alfalfa is being fed, 15,000 to 25,000 units of stabilized vitamin A per head per day should be fed as protection against feedlot disorders."

The Arizona report, by W. H. Hale and Farris Hubbert, Jr., of the department of animal science, suggests that steers receive at least 3,000 I.U. of vitamin A per 100 lb. of body weight daily in order to permit optimum performance and adequate liver stores. Different daily levels are required depending upon the weight of the steer. However, it can be simply stated, said the scientists, that fattening steers should receive 20,000 to 30,000 I.U. of vitamin A activity daily regardless of body weight.

"Most rations contain sufficient carotene to meet the minimum requirements of vitamin A for beef cattle, provided the carotene conversion is optimum," the report continues. "With these rations it is recommended that 10,000 I.U. of vitamin A be added daily to insure adequate A for fattening steers.

"On certain barley and milo rations which contain low levels of carotene, it is necessary to add 20,000 I.U. or more. As we learn more about the value of vitamin A for fattening steers, we may find that higher supplemental levels may improve performance, especially during stress periods such as hot or cold weather."

Theories Listed

The Occident Elevator bulletin notes that the cause or causes of deficiencies in feedlot cattle are not definitely known, but it says that the following are some of the theories—more than one of which may be proved true:

"1. The standard laboratory tests for carotene are unreliable for determining just how much vitamin A the animal can draw from the hay or silage.

"2. Recommended levels of vitamin A may not have been high enough to allow the animal to make full use of the feed consumed. The trend towards more concentrated rations has multiplied the effect of these deficiencies.

"3. High temperatures in the feedlot or on the range can increase the vitamin A requirements of individual animals.

"4. Phosphorus deficiencies may lower carotene conversion efficiency. (This could be a problem with cattle coming off the range in phosphorus-deficient areas such as Montana and North Dakota.)

"5. Nitrates in corn silage or hay apparently reduce carotene conversion.

"6. Animals that have been on a ration deficient in vitamin A are less able to digest and use the vitamin A in carotene. Thus, cows on green grass in spring still may not put enough vitamin A in their milk to satisfy the needs of the calf, and many such calves may never get enough vitamin A to perform their best.

"7. Carotene disappears fast in wet corn. Old corn, especially artificially dried, may also be short of carotene."

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HEALY, KANSAS — Directors of the Healy Cooperative Elevator Co. here announced that they have awarded a $145,000 contract to the Consumers Cooperative Assn. of Kansas City for the construction of a "push-button" feed mill. Harry Hawk, general manager, said the new mill is expected to be in operation by early fall.

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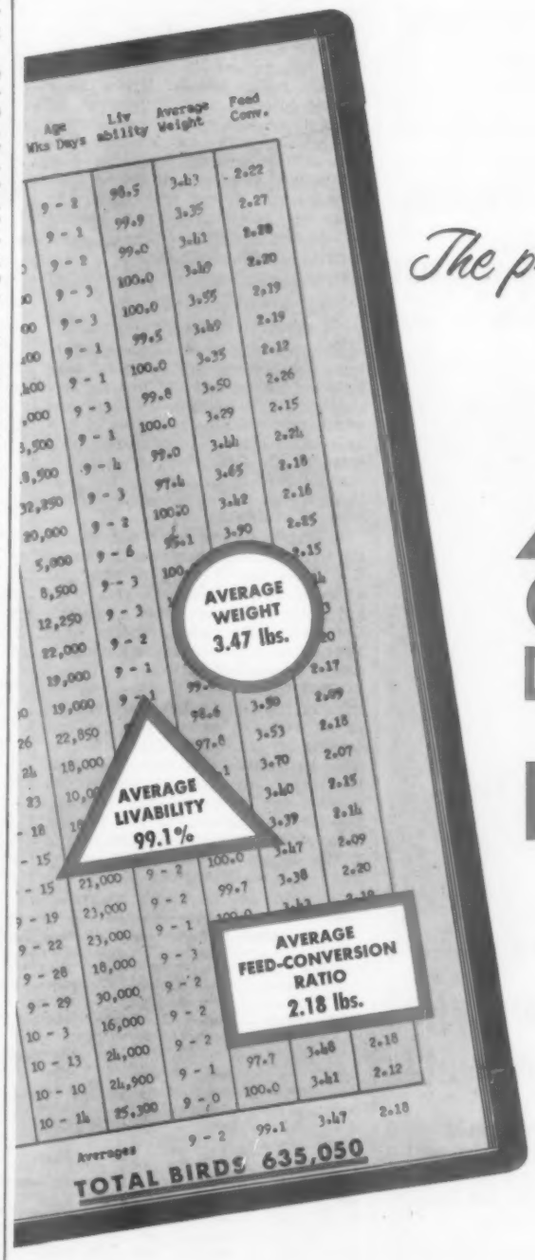

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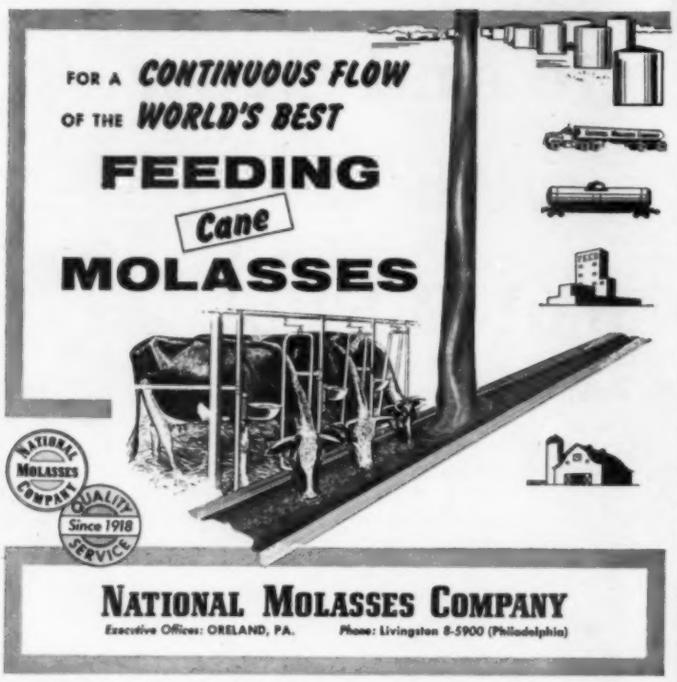

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The Relative Role of Granite Grit In Rearing Replacement Pullets And in Feeding Laying Hens

By Dr. G. F. Heuser
Stonemo Research Farm

With poultrymen going extensively to confinement rearing of replacement pullets, there is a need for more detailed information of the role of granite grit during the rearing period, as well as during the laying period. When most replacements were range reared, feeding granite grit was not as critical as today, because the birds were able to satisfy their natural need for grit by consuming stones or other hard materials found on the ground.

To study the role of granite grit during the rearing period, as well as during the laying period, a 16 month experiment was conducted at the Stonemo Research Farm. The experiment began Sept. 1, 1957, with 930 DeKalb pullet chicks. These were divided into six lots at random, of which three lots received grit during the rearing period. At maturity, 12 pens of 70 layers each were placed on grit as well as no-grit programs. This experimental design resulted in the following combinations of granite grit feeding programs:

Grit-rearing/grit-laying.
Grit-rearing/no grit-laying.
No grit-rearing/grit-laying.
No grit-rearing/no grit-laying.

The regular Stonemo recommendations for feeding granite grit were followed throughout the test for lots receiving grit, except for four lots which received assorted sizes of grit as adults. Starter size granite grit was fed the first three weeks; this was followed by grower size the next three weeks, and developer-layer size was fed after that.

All-mash rations were fed during the five-month rearing period. During the laying period, six pens were fed all-mash rations, and six pens were fed grain and mash. Feed consumption and performance records were kept on each pen of layers for an 11-month production period.

RESULTS—Table 1 gives the results of the pens, which were similar in all respects except for the grit feeding program. This makes it possible to make direct comparisons of the role of granite grit during the rearing and laying periods. In making the comparisons of grit feeding management as given in Tables 2 and 3, the values for combined all-mash and grain-mash rations have been used as being more representative. It will be noticed, however, that the relationships are similar in the all-mash fed birds and the ones fed grain-mash rations.

Dr. G. F. Heuser

AUTHOR—Dr. Heuser is director of the Stone Mountain Grit Co. Research Farm, Lithonia, Ga. He is professor emeritus of poultry nutrition at Cornell University. He also conducted research at Cornell for many years. Dr. Heuser is author of Feeding Poultry, a standard text in the field now in its second edition.

For example, in Table 2, in Comparison A, Group 1 was fed granite grit in both the rearing and laying periods. Group 2 did not receive grit at any time. Group 1 consumed 0.16 lb. less feed per bird during the laying period and 1.0 lb. less during the rearing period, produced 13.6 more eggs per hen, and gained .282 lb. more weight per hen, but consumed 1.3 lb. of grit per bird.

In Table 3, these data have been transformed to give the increased net returns per bird due to grit feeding by figuring feed at 4¢ per pound, eggs at 36¢ per dozen, meat at 15¢ per pound and grit at 1¢ per pound.

TABLE 1. Performance of Hens During Laying Year (11 months)

Group	No. of pens (70 birds in each pen)	—Grit feeding— program Rearing	Laying	Feed efficiency (lb./doz. eggs)	—Production— %	Eggs per hen	Gain in weight (lb./bird)	Feed* (lb./bird)
All-mash ration								
1	1	yes	yes	4.050	68.9	231.6	.696	78.18
2	1	no	no	4.315	65.8	221.0	.435	79.52
3	1	yes	no	4.144	67.5	226.8	.682	78.32
4	1	no	yes	4.247	68.2	229.0	.483	81.06
				4.189	67.6	227.1	.574	79.27
Grain-mash ration								
1	1	yes	yes	4.024	72.3	242.8	.875	81.41
2	1	no	no	4.267	67.3	226.1	.573	80.39
3	1	yes	no	4.132	67.9	228.1	.780	78.55
4	1	no	yes	4.285	71.6	240.0	.740	85.70
				4.177	69.8	234.3	.742	81.51
Combined all-mash and grain-mash rations								
1	2	yes	yes	4.037	70.6	237.2	.786	79.80
2	2	no	no	4.291	66.6	223.6	.504	79.96
3	2	yes	no	4.138	67.7	227.5	.731	78.44
4	2	no	yes	4.266	69.9	234.5	.612	83.31
1+3	4	yes	yes or no	4.088	69.2	232.4	.759	79.12
1+4	4	yes or no	yes	4.152	70.3	235.9	.699	81.56

*During the rearing period the feed consumption for the lots receiving grit was 21.4 lb. per bird, for those not receiving grit 22.4 lb. per bird.

EXPERIMENTAL PEN—Shown here is a typical experimental pen of 70 layers used at the Stonemo Research Farm, Lithonia, Ga., where Dr. Heuser conducts his research.

Looking at Comparison A in Table 3, net returns per hen were higher by 48.3¢ when birds received grit during the rearing and laying periods compared to no grit in either period.

Similarly, in Comparison B, feeding grit during both periods returned 27.9¢ more profit per hen than grit feeding during the laying period only.

In Comparison C, feeding grit during both periods meant 34.4¢ greater return per hen than just feeding grit during the rearing period.

In Comparison D, feeding grit only during the rearing period was more profitable by 24.7¢ than no grit during rearing when neither lot received grit as layers.

In Comparison E, feeding grit only during the laying period was more profitable by 19.8¢ than feeding no grit during the laying period when neither lot received grit during rearing.

In Comparison F several lots which received grit during the rearing period were combined regardless of the grit feeding during the subsequent laying period; in Comparison G, several lots which received grit during the laying period were combined regardless of the grit feeding during the rearing period. In comparison with similar lots not fed grit at any time, the over-all increased return of feeding grit during the rearing period was 36.9¢ and that of feeding grit during the laying period was 33.3¢.

The summary of the relative value of various grit feeding managements (Table 3) shows an increased return whenever grit is fed. The highest net returns per hen were obtained when grit was fed during both the rearing and laying periods. When grit was fed only during either the rearing or the laying period, the feeding of grit still shows benefit, but the returns are not as great. The increased returns during the laying year could be attributed to both the feeding of grit

TABLE 2. Effect of Various Grit Feeding Managements on Feed Consumption, Egg Production, Weight Gains and Grit Consumption

Comparison	Group No.	—Grit feeding— Rearing	Laying	Difference Feed* (lb.)	Eggs (No.)	Weight gain (lb.)	Grit (lb.)
A	1	Yes	Yes	L — .16	+ 13.6	+ .282	+ 1.3
	vs.						
	2	No	No	R —1.00			
B	1	Yes	Yes	L —3.51	+ 2.7	+ .174	+ .8
	vs.						
	4	No	Yes	R —1.00			
C	1	Yes	Yes	L +1.36	+ 9.7	+ .055	+ .8
	vs.						
	3	Yes	No				
D	3	Yes	No	L +1.52	+ 3.9	+ .227	
	vs.						
	2	No	No	R —1.00			+ .5
E	4	No	Yes	L +3.35	+ 10.9	+ .108	+ .5
	vs.						
	2	No	No				
F	1 + 3	Yes	Yes or no	L — .84	+ 8.8	+ .255	+ .65
	vs.						
	2	No	No	R —1.00			
G	1 + 4	Yes or no	Yes	L +1.60	+ 12.3	+ .195	+ 1.1
	vs.						
	2	No	No	R — .50			

*R—Rearing; L—Laying.

TABLE 3. Summary of Comparative Value of Various Grit Feeding Managements

Comparison	Grit management	Increased net returns per hen due to grit feeding*
	Correct grit feeding during both rearing and laying periods compared with:	
A	No grit at any time	+ 48.3c
B	Grit only during laying period	+ 27.9c
C	Grit only during rearing period	+ 34.4c
	No grit fed at any time compared with:	
D	Grit only during rearing period	+ 24.7c
E	Grit only during laying period	+ 19.8c
F	Grit during rearing period regardless of grit feeding during laying period	+ 36.9c
G	Grit during laying period regardless of grit feeding during rearing period	+ 33.3c

*The following prices were applied to the data in Table 2 to calculate returns: Feed 4c lb., eggs 36c doz.; meat 15c lb.; grit 1c lb.

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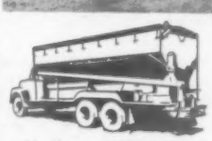

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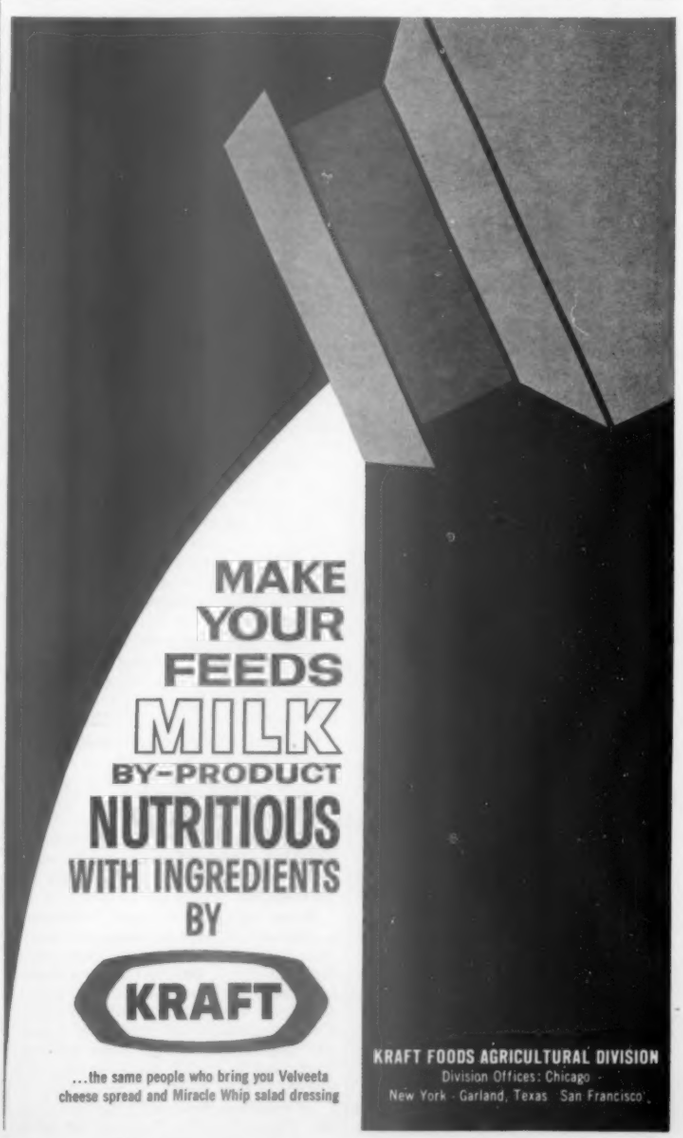

during the rearing period and the laying period. The effect of feeding grit only during the rearing period appears to be somewhat greater relatively than the effect of feeding grit only during the laying period.

CONCLUSIONS—The results of this experiment further confirm other studies at the Stonemo Research Farm and reports from research at agricultural experiment stations, namely the necessity of feeding grit throughout the life of the layer.

Replacement pullets which received granite grit during the rearing period as well as the laying period (when compared to birds receiving no grit during those periods) had a 48.3¢ greater return per hen. The increased return was due to more eggs laid, less feed required to produce a dozen eggs and greater increase in weight during the laying year.

The net returns per hen were reduced if grit was not fed either during the growing period or the laying period, but were greater than when no grit was fed at any time.

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Scientists Answer Questions on Calcium for Layers

ROANOKE, VA.—What is the recommended calcium level for hens? What is the tolerance level for calcium for layers?

These and other questions on calcium in laying rations were fielded by nutritionists during a poultry workshop session at the Virginia Nutrition Conference.

Here are some of the questions and answers on calcium—first, answers by Dr. M. B. Gillis of International Minerals & Chemical Corp., Skokie, Ill., a member of the poultry panel.

Q. What is the recommended calcium level for hens in 70 to 90% production?

A. 3 to 3½% calcium in the ration, plus oyster shell or soluble calcite grit fed free choice to the birds.

Q. How much calcium should be in the layer ration and how much supply in oyster shell or calcite grit?

A. 3% in the diet to meet minimum calcium requirements, and then let the birds supplement this from oyster shell or calcite grit, free choice.

Q. How effective is calcium gluconate in combating soft shell eggs?

A. It will do a good job to supply calcium, but it is expensive. Since the gluconate part comes from sugar, it is expensive.

Q. Does the ability to absorb and utilize calcium decrease markedly with age for the hen as has been shown in experiments at Oak Ridge to be true for cattle?

A. Calcium absorption in chickens does decrease with age, but the rate in comparison with cattle is not known.

Q. Calcium may increase shell thickness, but does this mean that it necessarily strengthens the shell?

A. Generally, there is a direct relationship between shell thickness and shell strength. You can get some calcification of the shell that does not necessarily add to shell strength.

Q. Reports from the field have indicated that in certain instances flocks have consumed an excess amount of oyster shell, and when this supplemental calcium has been restricted, egg shell quality has improved. What would be your explanation of this?

A. It is possible that a low amount of phosphorus in the diet could be tied up by excessive calcium, so it could affect production of sound shelled eggs.

Q. My hens are eating 10 times as much oyster shell as grit. Could this be caused by capillaria worm infection?

A. This ratio is about normal. I don't believe that capillaria worms would have any effect on calcium consumption.

Other questions were answered by Dr. J. R. Couch of Texas A&M College, another panelist. Here are some questions, answers and comments by Dr. Couch.

Q. What is the tolerance level for calcium for layers?

A. The top level of calcium that we have fed in experimental diets is 6%. In this experiment, the egg shells were best at the 6% level. This level slightly decreased egg production, which may have been due to lack of palatability.

Comment by Dr. Couch: Two companies made the statement laying birds could be taken off calcium. This resulted in a serious case of cage fatigue. In experiments at Texas A&M we tried taking calcium from the layer ration of layers in cages. The result was severe cage fatigue. This was on very large groups of layers.

In other experiments we removed the calcium three days out of each month for a period of 36 weeks. This had no detrimental effects over this length of time. I think, however, that as the hen reaches the end of her laying period, she is much more susceptible to calcium deficiency, and you could then expect some slight decrease in egg production.

Q. What part does vitamin D play in shell strength?

A. Add 15 million units of vitamin D per ton. We don't have any conception as to what part this vitamin plays in shell strength, but it must be supplied in the hen's diet.

MOVE BRANCH OFFICES

MEMPHIS, TENN.—Cargill, Inc.'s branch offices including the vegetable oil division, grain division, and commodities division, have been moved from the Sterick Building to Nutrena Mills, Inc., a wholly-owned subsidiary here. Philip St. Clair is manager of the vegetable oil division and Cary H. Humphries manages the grain and commodities divisions.

General Mills Names Purchasing Director

MINNEAPOLIS—Henry H. Finch has been named director of purchases for General Mills, Inc., C. H. Bell, company president, announced. Mr. Finch replaces C. V. Nelson, who retired April 1 after 47 years with the company—18 as purchasing director.

Mr. Finch, who joined General Mills in 1937, served as an accountant before being named purchasing agent for the concern's Sperry Operations in San Francisco in 1953. He has served as assistant to the director of purchases in the company's Minneapolis general offices since June, 1960.

DEHYDRATING MILL SOLD

AUBURN, ILL.—The Auburn Dehydrating Mill has been purchased by the Bankers Life & Casualty Co. of Chicago, it was announced. The mill was formerly owned by Frank Young, Springfield attorney.

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Researchers Suggest Restricted Feeding for Heavy Breed Pullets, Not Light Breeds

By ALLEN WORLEY
Special Correspondent

HERSHEY, PA.—The question of when to employ restricted feeding for pullets and when not to has led to a great deal of debate and experimentation among poultrymen. Because of this maze of opinion, controlled research was placed against the question with the result that restricted feeding for heavy breed pullets was found to be satisfactory.

These conclusions were derived recently after three years of investigation at the Cooperative Feed Evaluation Farms in Hershey, Pa., and Garner, N.C.

It was concluded that light breeds, particularly Leghorns, should be given all the feed they will eat during the growing period. Restricted feeding is definitely not recommended for them, a spokesman said.

On the other hand, recommendation was given to practicing restriction with heavy breeds such as White Rocks, Silver Hamps and White Americans. Restricted feeding should be employed during the period of eight to 24 weeks of age.

A spokesman for the research project said, "We spent three years on the project in order to be as objective as possible. We wanted to have our thinking clear of controversy, so we started from scratch."

The tests were broken down into two areas to determine the effects of restricted feeding on heavy weight layers, which produce eggs for broiler chicks, and on the light weight commercial white Leghorns.

The first eight weeks was considered too soon to retard the feeding of any of the birds. Then the eight to 24 weeks of age testing span was brought into effect.

The broiler producing bird was approached along three roads of tests. For comparison, one flock was placed on a full feed program with an ample supply of growing mash and oats. No attempt was made to restrict the feeding of this flock.

The second experiment phase set aside another heavy layer type flock which was given feed on a volume restriction basis. "We gave them only 80% of what they would normally eat," the spokesman said, "and this program also used the mash and oats diet."

The diet in the third test consisted of feed with high fiber content which provided the pullets with 660 calories instead of the normal 950. The feed mix used ran as high as 18 percent in fiber content.

The result of restriction: Egg production for the heavy birds was higher during the ensuing laying year. Sexual maturity was delayed. The egg size was considered to be better and operation was maintained at lower cost per dozen eggs.

Statistically, the heavy weight birds required about 28 lb. of feed per bird on the full feeding plan. Under restriction, they required only 24 lb. of feed during the test span. This represented a saving of about 4 lb. per bird or 16¢. It was felt that the test indicated that the poultryman would gain about 3¢ per dozen eggs through restricted feeding of heavy birds. These are the factors which led to the recommendations of restriction for the heavy broiler producing birds.

The same series of tests was run on the commercial white Leghorn flocks and obtained the opposite results. On full feed, the Leghorns produced more eggs than those being restricted. They laid more large eggs sooner through restriction, but the number of eggs laid by those on full feed soon made up the difference.

The full fed Leghorns had a lower average feeding cost per dozen eggs. It was also found that the restricted light weights were smaller at housing time, although there was no difference in mortality records.

One of the controversial points concerning the restricted feeding theory is that Leghorn sexual maturity is delayed by restriction, giving the birds better body structure and theoretically making them better able to resist disease. The findings showing no difference in mortality tend to void this idea, a spokesman said.

The research spokesman stated, "Considering that the full fed Leghorn out-produced the restricted bird, the body structure claim in favor of restriction should also lead the poultryman to discard the old thought."

The research was summarized by noting that heavy birds carry excess weight not needed for egg production. The restricted birds were streamlined during production but averaged out in weight during the long run.

On the other hand, the Leghorn is already streamlined, and it is now felt that restricted feeding puts this type of bird at a production disadvantage.

Distribution Center

CONCORD, MASS. — A new distribution center for Cobb White Rock breeding stock is now being set up at Frelighsburg, Quebec, it was announced by Robert C. Cobb, Jr., vice president of the firm.

The new organization, to be known as Cobb's Pedigreed Chicks, Ltd., Quebec, is part of Cobb's expanded program of international distribution, and is specifically designed to provide greatly improved service to the broiler industry in Quebec and Ontario provinces of Canada, it was reported.

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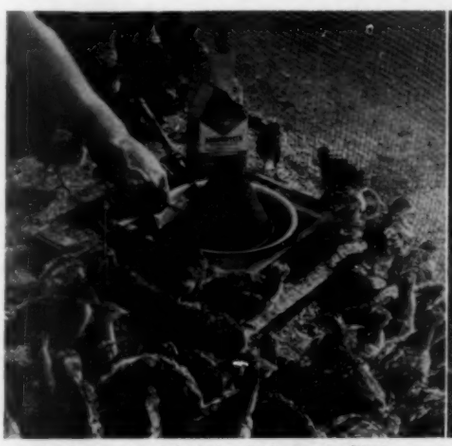

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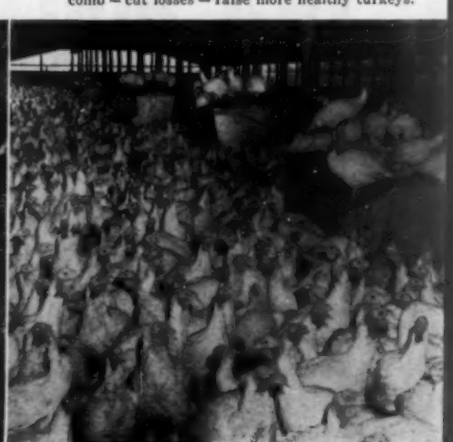

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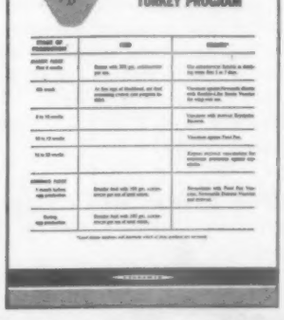
COORDINATED FEED-HEALTH TURKEY PROGRAM

This folder describes the step-by-step Coordinated Feed-Health Program for turkeys. It is for distribution to your customers. If you need extra copies, see your Cyanamid representative or write directly to Cyanamid.

This month, your prospective customers are reading the advertisement shown here. It appears in leading turkey papers reaching 95% of all turkey growers. These customers will also be listening to well-known Farm Directors tell the benefits of the Coordinated Feed-Health Turkey Program on 40 radio stations throughout the country.

Efficiency of High Concentrate Rations For Lambs Reported at South Dakota Event

BROOKINGS, S.D.—Results of a recent study of lambs in the feedlot show they can make rather efficient use of a high concentrate ration and this efficiency can be improved somewhat by using certain feed additives, it was announced at the Sheep Field Day held at South Dakota State College here.

Other research reported at the Sheep Field Day included two lamb feeding trials with diethylstilbestrol implants and work on preventing loss of sheep through urinary calculi.

Dr. L. B. Embry, nutritionist in animal husbandry department at the college, told of experiments on lambs comparing five feeding treatments with a control group. Included in the study were dynafac, two enzyme preparations (Rum-a-lak and Zymo-Pabst) and two antibiotics (bacitracin and Aureomycin). It was reported that the enzyme preparation Zymo-Pabst and the antibiotic bacitracin showed small responses and Dr. Embry said the treatment could be of practical value if large numbers of lambs were fed.

"Many sheep feeders consider it risky to feed lambs a ration containing less than 50% roughage," Dr. Embry said. "The rations fed the wether and ewe lambs in this experiment contained 25% alfalfa hay and 70% rolled shelled corn. The other 5% included salt, dicalcium phosphate, soybean meal and vitamin A supplement.

"Even though the lambs were not vaccinated, losses from overeating have not been greater on this high concentrate ration than on one containing 50% roughage.

"The amount of feed required per hundred pounds of gain was low with all rations. The least feed required was with the enzyme Zymo-Pabst and the antibiotic bacitracin in each trial —484 and 481 in the 40 day trial with heavy lambs and 505 and 511 in the 68 day trial with light lambs.

DIETHYLSTILBESTROL IMPLANTS—Dr. Embry also reported on lamb feeding trials providing what he termed a "rather good case for diethylstilbestrol implants."

Dr. Embry told the audience at the sheep event that two feeding trials were conducted with wether lambs that were implanted with 3 mg. diethylstilbestrol.

In the first trial the implanted animals put on 31.8% more gains than control groups, he said. The second group gained 24% faster than controls, it was pointed out. Implanted ewe lambs gained 16.7 and 8.3% better respectively than control groups.

When the diethylstilbestrol was fed orally at the rate of 1.8 mg. per day wether lambs increased rate of gain by 12% in one trial but showed no improvement in the other, it was reported. It did not improve weight gains of ewe lambs, Dr. Embry said.

Implanting also improved feed efficiency. Efficiency improved by 18.6% in one trial and 6.7% in the other. "Feeding DES did not improve feed efficiency of 85 lb. lambs but light lambs (64 lb. average) responded about the same as implanted lambs did," he said.

Dressing percentage, carcass conformation, carcass finish and carcass grade were about the same for lambs treated with DES and nontreated lambs, it was reported.

"Dynafac was added to several rations included in the study but appeared to have no effect on improving performance in these trials," Dr. Embry stated.

URINARY CALCULI—Dr. Royce Emerick, experiment station biochemist, reported on work South Dakota State College biochemists and animal husbandmen are doing on prevention of sheep losses from "water belly" or urinary calculi.

Dr. Emerick explained that urinary calculi are sometimes referred to as kidney stones or bladder stones. When the accumulations become large enough to block off the urinary tract the bladder ruptures and results in the condition "water belly," he said.

Dr. Emerick explained that two types of urinary calculi are commonly found in South Dakota, but the exact cause or causes are not known. Experiments have shown high levels of phosphorus to be a contributing factor. When a high level of phosphorus was added to sheep rations, the incidence of urinary calculi increased, he said. This was corrected, however, by adding calcium to obtain a proper calcium to phosphorus balance, he pointed out.

Some reports implicate the hormone diethylstilbestrol (DES), he commented. When sheep were implanted with DES in a 100 day trial no urinary blockage occurred, but a greater number of kidney deposits were noted in the implanted sheep, he said. DES treatment of sheep getting a high phosphorus ration did not cause the incidence of kidney stones to be any worse, he continued. He emphasized that more work was going to have to be done to determine if DES has a definite effect.

Although no single preventive has been devised, Dr. Emerick says ranchers or farmers can minimize losses by making certain that sheep get plenty of good, clean water, both winter and summer. Water consumption can be encouraged by feeding salt, the biochemist pointed out. It was stated that flock owners should also provide an adequate balance of calcium and phosphorus by adding a calcium source such as ground limestone to high concentrate rations.

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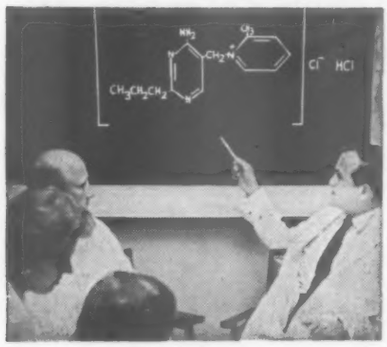

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Tested birds were exposed to four consecutive generations of ten virulent strains of *E. tenella* which did not develop significant resistance to AMPROL.

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Recommended use-level for most field conditions is 0.0125%.

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Cooperative Feed Testing Farm Reports On Research Done During Its First Year

LEXINGTON, ILL.—Results of swine and beef research conducted during the first year of operation of the new Cooperative Feed Testing Farm here have been reported.

Making the report, which appeared in Service Guide, a publication of Southern States Cooperative, was T. A. King, animal nutritionist.

The farm for research in swine and beef is sponsored by 15 cooperatives: Cooperative G.L.F. Exchange, Inc.; Cooperative Mills, Inc.; Cotton Producers Assn.; Central Carolina Farmers Exchange, Inc.; Farm Bureau Milling Co.; Farmers Cooperative Exchange; Illinois Farm Supply Co.; Indiana Farm Bureau Coop.; Land O'Lakes Creameries, Inc.; Michigan Farm Bureau Services; Ohio Farm Bureau Coop. Assn., Inc.; Pennsylvania Farm Bureau Coop.; Southern States Cooperative; United Cooperative, Inc., and Wisconsin Farmco Service.

The group also operates other facilities for evaluating broiler feeds, layer feeds and turkey feeds.

THYROPROTEIN FEEDING—Mr. King reported that no influence one way or the other could be measured due to feeding of thyroprotein in brood sow rations to stimulate lactation in tests at the farm. He reports that with each group of sows farrowed, half received thyroprotein and half served as controls. He stated that the thyroprotein was employed in two ways: (1) from the 109th day of gestation through the 14th day of lactation, and (2) from the 2nd to the 42nd day of lactation.

Measurements included weight loss of sows, weight gain of pigs and pig survival, he commented.

CREEP-FEED TEST—"To date, we have found nothing that will attract pigs to a feed in the manner that proper levels of sugar will," said Mr. King. He said this test was run on each group of pigs at the farm.

"Pig acceptance of creep feed offered is of utmost importance and this type of testing will continue to be an important segment of our research," commented Mr. King.

UNKNOWN GROWTH FACTORS—Tests evaluated such products as fish solubles, alfalfa meal, fermentation solubles, dried whey and distillers solubles "because of the controversy over their use," said Mr. King. The researchers said the tests sought the expression of these factors today in rations complete with energy, protein, known vitamins, minerals and antibiotics.

He stated that the tests at the farm showed, with the exception of alfalfa meal, that these products generally give a small but persistent increase in average daily gain when fed to pigs in the 30-90 lb. weight range. "Tests on these products were usually replicated two or three times, and we have been impressed by the duplicability of results," said the nutritionist.

MINERAL LEVELS—This study of mineral levels in swine feeds was undertaken because producers had challenged mineral levels in feeds for dry lot and pasture feeding as being inadequate when these rations are fed to pigs confined on concrete. It was noted that many times pigs fed on concrete tend to develop "knots" on the leg joints, a development that is rarely noted otherwise, and these are associated with mineral deficiencies.

Mr. King said that to study this problem three levels of phosphorus (represented by .5%, 1.0% and 1.5% dicalcium phosphate) were each fed

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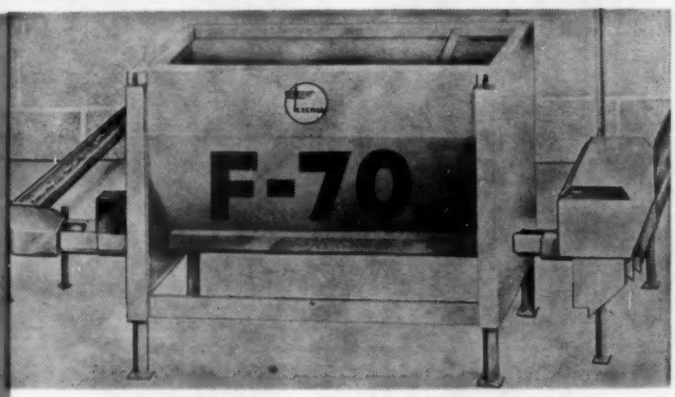

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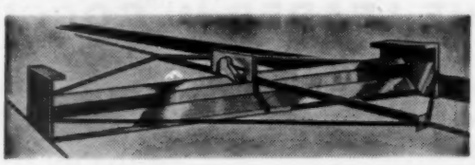

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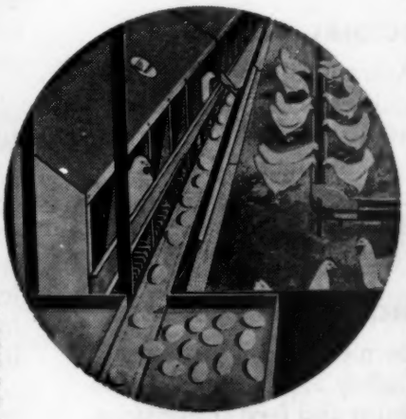

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with four levels of calcium (1.0%, 1.5%, 2.0% and 2.5% limestone). Pigs averaging 26 lb. were fed to market weight employing corn-soy diets. Results, both growth and feed efficiency, were not adversely affected by amounts of mineral in the diet as long as calcium and phosphorus remained in a certain balance, Mr. King commented.

He continued by stating that high limestone and low phosphate, and the higher phosphate with the lower limestone in all cases reduced both growth and feed efficiency. Levels of .5% dicalcium phosphate with 1.0% limestone performed about as well as any of the combinations tested, he said. A "knot score" was made on each lot of pigs and no differences could be ascertained, he stated.

FEEDING SYSTEMS STUDY—"Most research has shown some advantage in a system employing complete feeds over a free-choice feeding system," said Mr. King. "However, if the feeder is not in a position to control feed waste, the advantages of complete feed are soon negated and the feeder may be better off on a free choice program. At any rate, going to complete feeds is not always an easy task and at best is beset with problems and costs.

"Is there any possibility of overcoming these problems by varying the conventional approach to complete feeds? To study this, an experiment comparing six methods of feeding growing-fattening swine was designed. These methods included: (1) conventional complete feed, regular grind and precision mixed, (2) whole corn and 40% supplement pelleted free choice, (3) 40% supplement pellets and whole shelled corn mixed to give the same composition as ration 1, (4) 40% supplement crumbles and shelled corn mixed as No. 3, (5) 40% supplement crumbles and cracked corn mixed as No. 3, and (6) 40% supplement pellets and cracked corn mixed as No. 3. Rations 3 through 6 were crudely mixed via an unloading wagon. These lots were replicated three times and 306 pigs were included in the test. Systems 1 and 5 gave greatest rate of gain and best feed efficiency in all three replications and results of these two systems were essentially the same. Results obtained from any of methods 2, 3, 4 and 6 were inconsistent.

"From this we have concluded that complete feeds may be crudely compounded, provided the particle size of materials mixed is relatively the same."

VITAMINS AND ANTIBIOTICS DURING STRESS—In a 10 day period under stress condition, it was found that extra gain put on by pigs will more than pay for supplemental vitamins and antibiotics, according to Mr. King.

In the test, approximately 200 pigs were weaned, vaccinated for hog cholera and vaccinated for swine erysipelas on the same day. This placed a stress condition on the pigs frequently duplicated by swine growers in commercial swine production, Mr. King commented. These 200 pigs were equally divided into two groups on the day of the weaning, both receiving the same ration and management except that one group received a vitamin-antibiotic preparation in the drinking water up to 10 days. The pigs receiving the vitamin-antibiotic supplementation were 11% heavier at the end of the 10 day period, research statistics show. And, Mr. King said that it would be expected that the main advantage might come in subsequent performance.

CATTLE TESTS—At the time that cattle tests were initiated at the research unit, Mr. King said, it was uncertain about how long stilbestrol might be available and the researchers wanted to explore more fully the possibilities of other additives. In these tests a good response was obtained from Aureomycin and Agrozyme in the lots fed corn and hay in a conventional way, it was reported. But no response was received when used in complete, pelleted rations. The stilbestrol gave a favorable reaction in both situations, it was stated. Mr. King said that an interesting aspect of the cattle testing program was a solid 19% increase in feed efficiency in those lots fed complete pelleted rations.

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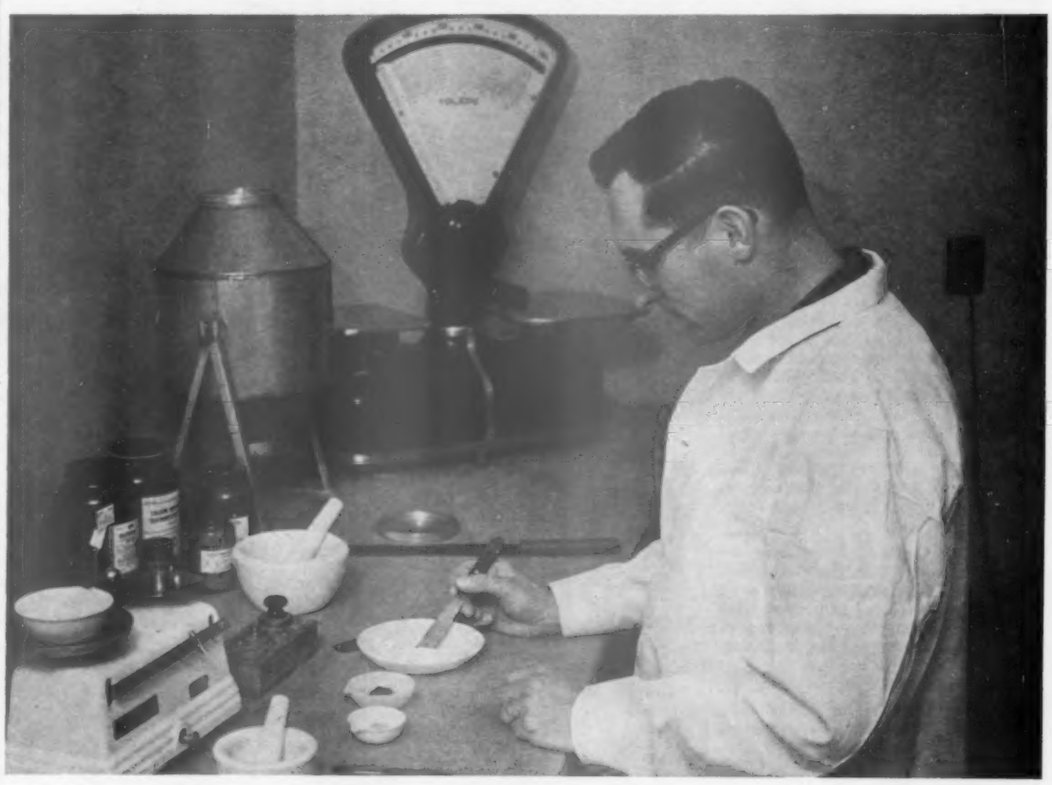

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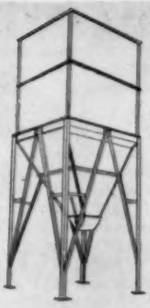

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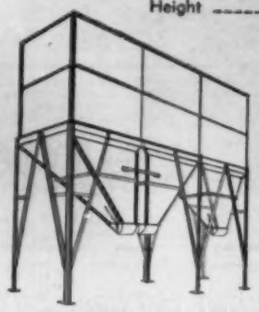

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Depth ..... 12'-0"
Height ..... 18'-0½"

IB 18682-42
Capacity ..... 12.18 tons
Shipping wt. ..... 2461 lbs.
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Depth ..... 6'-4"
Height ..... 14'-10½"

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Capacity ..... 18.18 tons
Shipping wt. ..... 4263 lbs.
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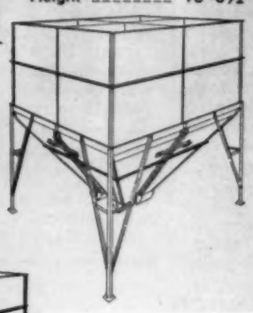

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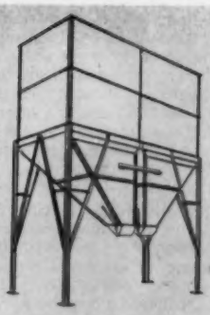

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Depth ..... 12'-0"
Height ..... 14'-10½"

IB 121282-84
Capacity ..... 24.24 tons
Shipping wt. ..... 4790 lbs.
Width ..... 12'-0"
Depth ..... 12'-0"
Height ..... 18'-0½"

The No. 6682 hopper has a minimum pitch of 60° and is additionally versatile in that it has a side draw or a corner draw base. This makes possible a cluster of bins utilizing either draw to best suit your mill conditions.

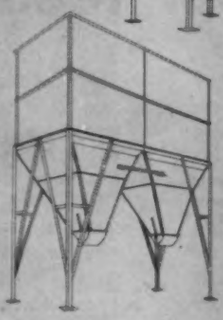
ADD BULK STORAGE TO YOUR FEED MILL WITH *Lemanco* QUALITY PREFABRICATED STEEL BINS

7682

IB 7682-48
Capacity ..... 4.92 tons
Shipping wt. ..... 1608 lbs.
Width ..... 7'-4"
Depth ..... 6'-4"
Height ..... 15'-4½"

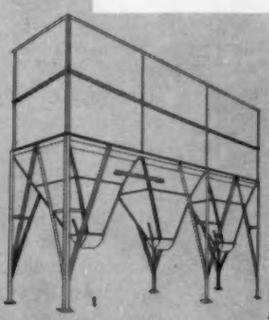
IB 7682-96
Capacity ..... 7.65 tons
Shipping wt. ..... 1878 lbs.
Width ..... 7'-4"
Depth ..... 6'-4"
Height ..... 19'-0½"

The No. 7682 hopper with its minimum 60° pitch and side draw is extremely popular due to its larger capacity. This hopper can be joined with the No. 6682 hopper under certain conditions.



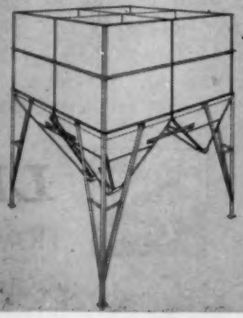
IB 14682-48
Capacity ..... 9.84 tons
Shipping wt. ..... 2961 lbs.
Width ..... 14'-0"
Depth ..... 6'-4"
Height ..... 15'-4½"

IB 14682-96
Capacity ..... 15.3 tons
Shipping wt. ..... 3605 lbs.
Width ..... 14'-0"
Depth ..... 6'-4"
Height ..... 19'-0½"



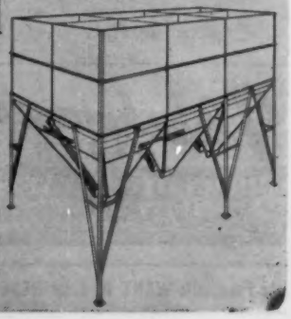
IB 21682-48
Capacity ..... 14.76 tons
Shipping wt. ..... 3028 lbs.
Width ..... 20'-8"
Depth ..... 6'-4"
Height ..... 15'-4½"

IB 21682-96
Capacity ..... 22.95 tons
Shipping wt. ..... 4096 lbs.
Width ..... 20'-8"
Depth ..... 6'-4"
Height ..... 19'-0½"



IB 141282-48
Capacity ..... 19.68 tons
Shipping wt. ..... 3871 lbs.
Width ..... 14'-0"
Depth ..... 12'-0"
Height ..... 15'-4½"

IB 141282-96
Capacity ..... 30.6 tons
Shipping wt. ..... 5026 lbs.
Width ..... 14'-0"
Depth ..... 12'-0"
Height ..... 19'-0½"



IB 211282-48
Capacity ..... 29.52 tons
Shipping wt. ..... 5724 lbs.
Width ..... 20'-8"
Depth ..... 12'-0"
Height ..... 15'-4½"

IB 211282-96
Capacity ..... 45.9 tons
Shipping wt. ..... 7390 lbs.
Width ..... 20'-8"
Depth ..... 12'-0"
Height ..... 19'-0½"

The rotary gate design is very popular when weigh buggies are used since it is easy to dribble feed with this gate. Rack and pinion gates are also available for any of these bins.

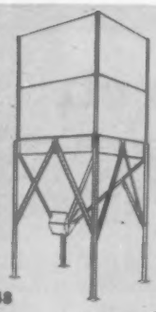
•

* The bin height shown on both pages includes 42-inch clearance under rotary gate.

5554

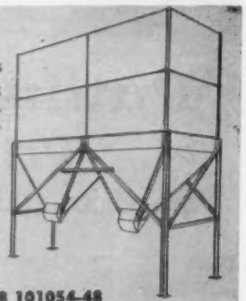
IB 5554-48
Capacity ..... 3⅜ tons
Shipping wt. ..... 1060 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 12'-10"

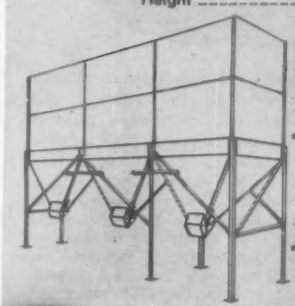
IB 5554-96
Capacity ..... 5 tons
Shipping wt. ..... 1200 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 16'-6"



IB 10554-48
Capacity ..... 6¾ tons
Shipping wt. ..... 1850 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 12'-10"

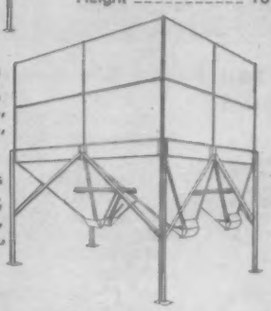
IB 10554-96
Capacity ..... 10 tons
Shipping wt. ..... 2000 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 16'-6"





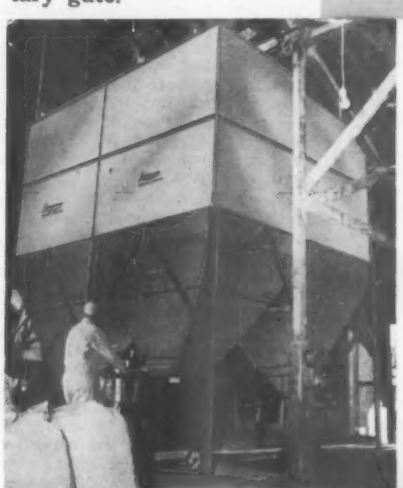
IB 15554-48
Capacity ..... 10 tons
Shipping wt. ..... 2300 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 12'-10"

IB 15554-96
Capacity ..... 15 tons
Shipping wt. ..... 2800 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 16'-6"



IB 101054-48
Capacity ..... 13½ tons
Shipping wt. ..... 2800 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 12'-10"

IB 101054-96
Capacity ..... 20 tons
Shipping wt. ..... 3200 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 16'-6"



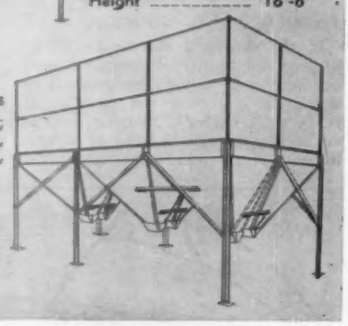
These LEMANCO bins, with their common wall construction, and either one or two tiers of sides, can fit into most any feed mill to give safe, economical bulk storage of feed and ingredients. Their open top permits ease of checking contents and filling to capacity.

The various LEMANCO bin sizes make it possible to fit additional bulk storage into your mill quickly, easily, and economically, using less floor space.

Mobile mill operators are finding additional use for their equipment by using LEMANCO storage bins with a portable auger.

IB 151054-48
Capacity ..... 20¼ tons
Shipping wt. ..... 3750 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 12'-10"

IB 151054-96
Capacity ..... 30 tons
Shipping wt. ..... 4400 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 16'-6"



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These bins are especially designed for use with weigh buggies and are adaptable where several hoppers are needed in limited space.

The No. 5554 hopper has a minimum pitch of 45° in the back. The other three sides are 60° or more. As the gate on this bin is manually operated, bridging is a minor problem. Hoppers are all side draw.

The No. 5564 hopper is available as either a side or corner draw hopper. It has a minimum pitch of 60° on two sides and the other two are practically vertical. This hopper can be incorporated in a cluster with the No. 5554 where it is advantageous to do so, keeping in mind that the No. 5564 hopper is approximately 10" lower than the No. 5554. The 60° pitch and the corner draw practically insure flow of any type ingredient.

•

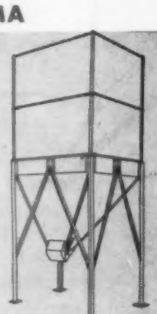
The LEMANCO weigh buggy comes in two sizes: Model 890, capacity 890 lbs. @ 40 lbs. per cubic foot and Model 1280, capacity 1280 lbs. @ 40 lbs. per cubic foot. The scale capacity on each is 1300 lbs. The low scale post permits the LEMANCO weigh buggy to be pushed under a cluster of bins to the second or third row of hoppers.

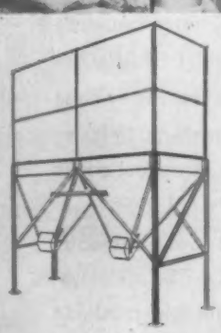
Write for prices.

5564

IB 5564-48
Capacity ..... 3⅜ tons
Shipping wt. ..... 1100 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 13'-8"

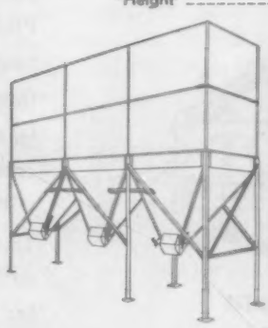
IB 5564-96
Capacity ..... 5 tons
Shipping wt. ..... 1250lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 17'-4"





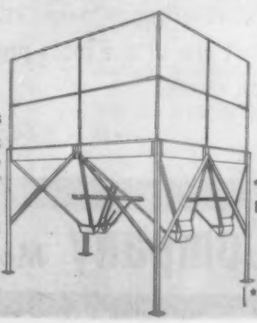
IB 10564-48
Capacity ..... 6¾ tons
Shipping wt. ..... 1950 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 13'-8"

IB 10564-96
Capacity ..... 10 tons
Shipping wt. ..... 2100 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 17'-4"



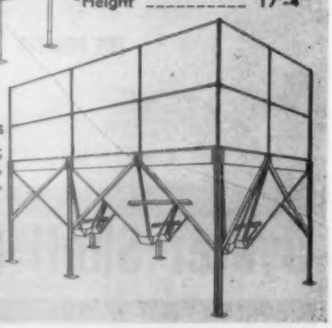
IB 15564-48
Capacity ..... 10 tons
Shipping wt. ..... 2300 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 13'-8"

IB 15564-96
Capacity ..... 15 tons
Shipping wt. ..... 2800 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 17'-4"



IB 101064-48
Capacity ..... 13½ tons
Shipping wt. ..... 3200 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 13'-8"

IB 101064-96
Capacity ..... 20 tons
Shipping wt. ..... 3400 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 17'-4"

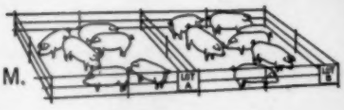


IB 151064-48
Capacity ..... 20¼ tons
Shipping wt. ..... 3950 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 13'-8"

IB 151064-96
Capacity ..... 30 tons
Shipping wt. ..... 4600 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 17'-4"

Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.



Collaborative Study of the AGU Method of Grading Cottonseed Meals for Laying Rations

● V. L. Frampton (Southern Regional Research Lab., USDA, New Orleans), and B. Piccolo (National Cottonseed Products Association Fellow, Regional Research Lab., New Orleans). The Journal of Agricultural and Food Chemistry, Vol. 9, No. 2, pp. 129-131, March-April, 1961.

ABSTRACT AND COMMENT

In the southern and western sections of our country, cottonseed meal has been used in varying amounts in laying rations over the past many years with rather disastrous results at higher levels (5-10% or over). Recently, so-called degossypolized meals have become available and have been used more frequently in laying rations, and at higher levels than recommended formerly for untreated meals. Actually, present day evidence indicates that "free" gossypol itself has little relation to discoloration of egg yolks (Frampton, 1960), although formerly it was believed that the discoloration was produced in the yolks because of the "free" gossypol present in the cottonseed meals (Heywang et al., 1955, 1954; Schaible et al., 1934; Swenson et al., 1942).

A method for grading cottonseed meals for use in laying rations has been proposed by Grau et al (1954, 1955) and depends upon a greater concentration in the yolks of eggs from hens fed cottonseed meal of some acetone-hexane soluble material than that occurring in the yolks from hens fed other rations. This acetone-hexane soluble material has an absorption maximum at wave length 440 mu. It is ascribed to be due to a condensation product of gossypol and cephalin and the increased absorption obtained by the yolks from cottonseed meal fed hens was proposed as a measure of the available gossypol in the cottonseed meal fed—or AGU value.

A collaborative test was undertaken to test this method for determining the practical applications and its commercial value. Seven different commercial feed company laboratories and universities took part in the study. Much interest had been shown in this method but practical results in the hands of some feed companies were rather disappointing. When additional amounts of cottonseed meal were used in the rations, based upon a low AGU value, it was often found that the hens produced a high percentage of discolored yolks of typical brown color when stored under refrigerated conditions.

The basal ration used in the study had the following composition: Cottonseed meal, 10%; soybean meal, 15%; ground yellow corn, 15%; ground milo, 49.4%; dehydrated alfalfa meal, 2.5%; ground limestone, 3.5%; bone meal, 3.5%; manganized salt, 0.5%; source of riboflavin equivalent to 500 unit/gm., 0.3%; source of vitamin A, 2250 units, and vitamin D, 300 units/gm., 0.3%. Six cottonseed meals which differed widely in their ability to induce egg yolk discoloration in stored shell eggs were distributed to each of the seven stations where they were incorporated into laying rations and fed to laying birds. A control ration was used also which had soybean meal completely replacing all cottonseed meal. Hens that had not received cottonseed meal, oil or soapstock for at least 60 days prior to the start of the experiment were used.

The results of the study indicated that the AGU method of grading cottonseed meals for laying rations may not be relied upon for grading cottonseed meals. This was shown by the fact that significant differences existed in AGU values among eggs, birds and meal, and the fact that the correlation between AGU values of cottonseed and coloration in yolks of stored shell eggs produced by the meals was virtually zero. Based upon these results it still looks like we had better limit the use of cottonseed meal in laying rations to about 5% or less, with an absolute maximum of 7½%, until at least a practical method is developed to predict which meals will produce discoloration. One of the unfortunate aspects of this entire problem is that the trouble does not show up often until many weeks after the hens have been fed feed which will induce the storage discoloration.

●

Timely and Worth Noting

Although not directly related to the feed manufacturing industry, everyone should have an awareness of the problem of the possibility of the contamination of feeds and human food by atomic "fallout" from testing of nuclear devices, etc. In the current issue of the Journal of Agricultural and Food Chemistry (Vol. 9, No. 2, pp. 90-126) appears a symposium of several papers relating to this problem entitled, "Symposium on Radioactive Fallout in Relation to Foods." The papers are all by outstanding authorities in their respective fields of endeavor and represent one of the most up-to-date and informative collections of material on the subject. The titles and authors of the papers are as follows:

(1) "Introduction," E. B. Fowler, Los Alamos Scientific Laboratory,

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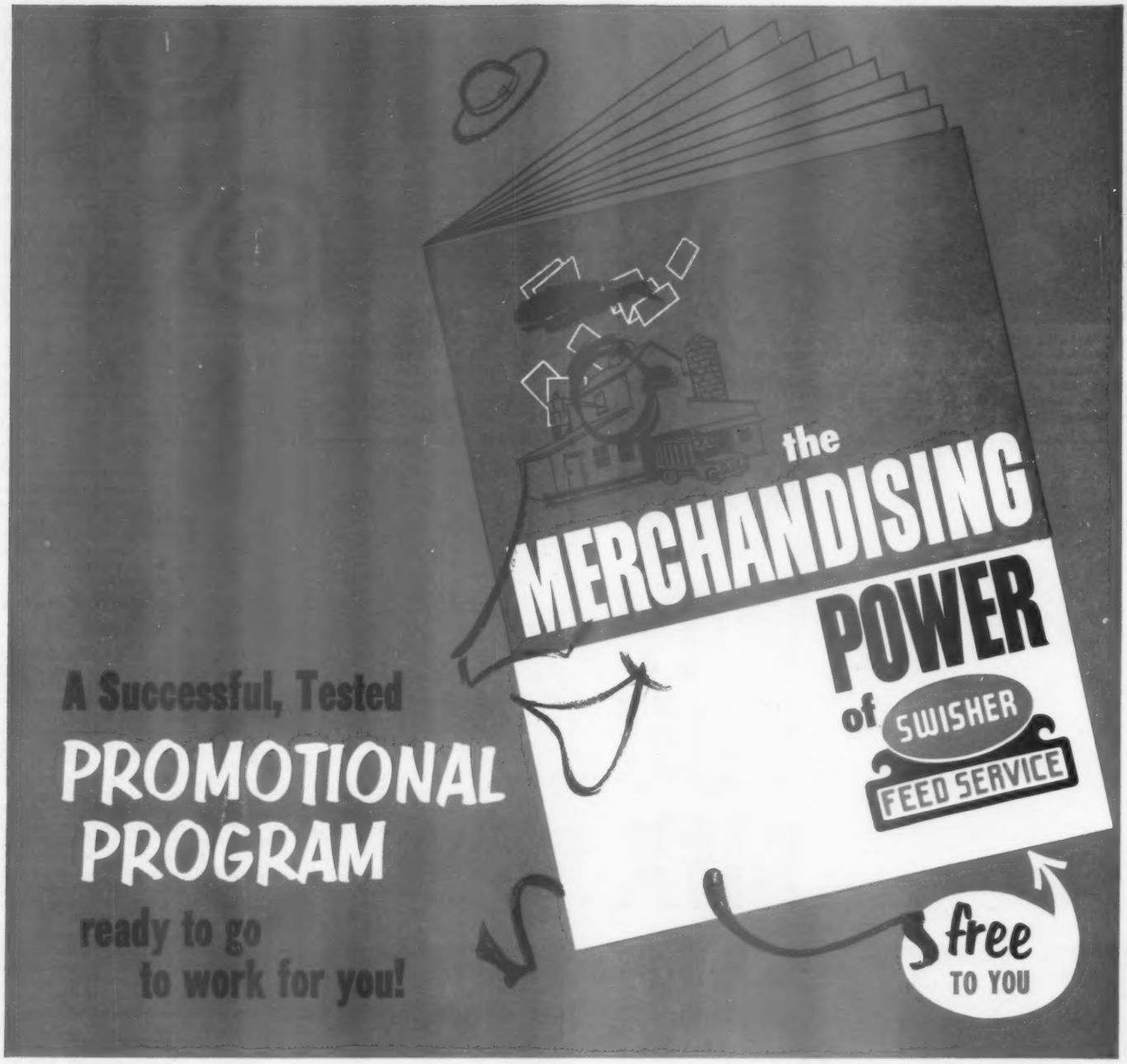
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PHOSPHATE MEETING—Visiting at a recent luncheon in Portland, Ore., to celebrate the arrival of International Minerals & Chemical Corp's. first bulk shipment of Tricaphos from Japan, are, left to right; J. Nagano, Tokyo, Japan, chief of Onoda Hiryo Co. sales section; N. Hayashi, and Walter G. Hanson, Seattle, Wash., James Farrell & Co. partner. James Farrell & Co. represented IMC.

University of California, Los Alamos, N.M.

(2) "Some Considerations of Present Biospheric Contamination by Radioactive Fallout," W. H. Langham, same address as above.

(3) "Availability of Exchangeable and Nonexchangeable Strontium-90 to Plants," H. Roberts, Jr. and R. G. Menzel, USDA, Beltsville, Md.

(4) "Depth of Feeding as It Affects the Concentration of Radioactivity Within the Plant," C. W. Christenson and E. B. Fowler, Los Alamos Scientific Laboratory, University of California, Los Alamos, N.M.

(5) "Uptake of Radioactive Fission Products by Crop Plants," H. Nishita, E. M. Romney, and K. H. Larson, University of California, Los Angeles, Cal.

(6) "Absorption of Radionuclides by Aboveground Plant Parts and Movement Within the Plant," H. B. Tukey, S. H. Wittwer and M. J. Bukovac, Michigan State University, East Lansing, Mich.

(7) "Dietary Considerations of the Radionuclide Contamination of Nonmilk Foods," R. H. Wasserman and C. L. Comar, Cornell University, Ithaca, N.Y.

(8) "Radionuclides in Milk," J. E. Campbell, G. K. Murthy, C. P. Straub, K. H. Lewis and J. G. Terrill, Robert A. Taft Sanitary Engineering Center, U.S. Dept. of Health, Education, and Welfare, Cincinnati, Ohio.

(9) "Radionuclides in Man from Nuclear Tests," J. L. Kulp, Columbia University, Palisades, N.Y.

Another paper is also presented in the same issue of the Journal (C. Blincoe, pp. 127-131) which is on the same general subject, but is not one of the symposium contributions. This paper is entitled "Determination of Fallout Cesium-137 in Animal and Plant Tissues."

Although the papers may not interest all of us universally, it is obvious that some of them contain information which will be of vital importance to know if we ever have to operate under conditions of nuclear warfare. Certain crops, methods of management, etc., show higher levels of contamination with "fallout" than others. The widest possible dissemination of all possible information on this subject will avert a real tragic situation if or when an attack does occur—not meaning to be a prophet of doom of course!

First Alabama Poultry Jubilee Is April 21

BIRMINGHAM, ALA. — The first Alabama Poultry Jubilee will be held at the Dinkler-Tutwiler Hotel in Birmingham on Friday evening, April 21, 1961, instead of April 22 as originally announced. Alabama poultry queen finals and the Alabama Poultry Products Cooking Contest finals will be held in connection with the Jubilee promotion plate dinner affair.

The Alabama Poultry Industry Assn. has recently been awarded the Miss Universe Beauty Pageant franchise for Alabama. This year's winning APIA poultry queen will represent Alabama in the Miss Universe Beauty Pageant to be held at Miami Beach, Fla., July 7-16.

The ninth annual Alabama Poultry Industry convention will be held in Montgomery June 20-21, as originally scheduled, with the Whitley Hotel as headquarters, W. L. Walsh, executive secretary-treasurer of APIA announced.

Meat Processing Plant

HATTIESBURG, MISS.—The Merchants Co., which had shelved plans to establish a meat processing plant recently, has decided to go ahead with its original plans.

W. W. Wright, president of The Merchants Co., said the decision to proceed in establishing the meat processing plant in its newly acquired building followed a change in sentiment of people living in the area.

Plans to include a meat processing plant in the former Dixie Aluminum Corp. building were abandoned when citizens in the area protested its establishment.

He said work on plans and specifications for remodeling the building, to cost an estimated $400,000, will begin immediately and will include the establishment of a meat processing plant.

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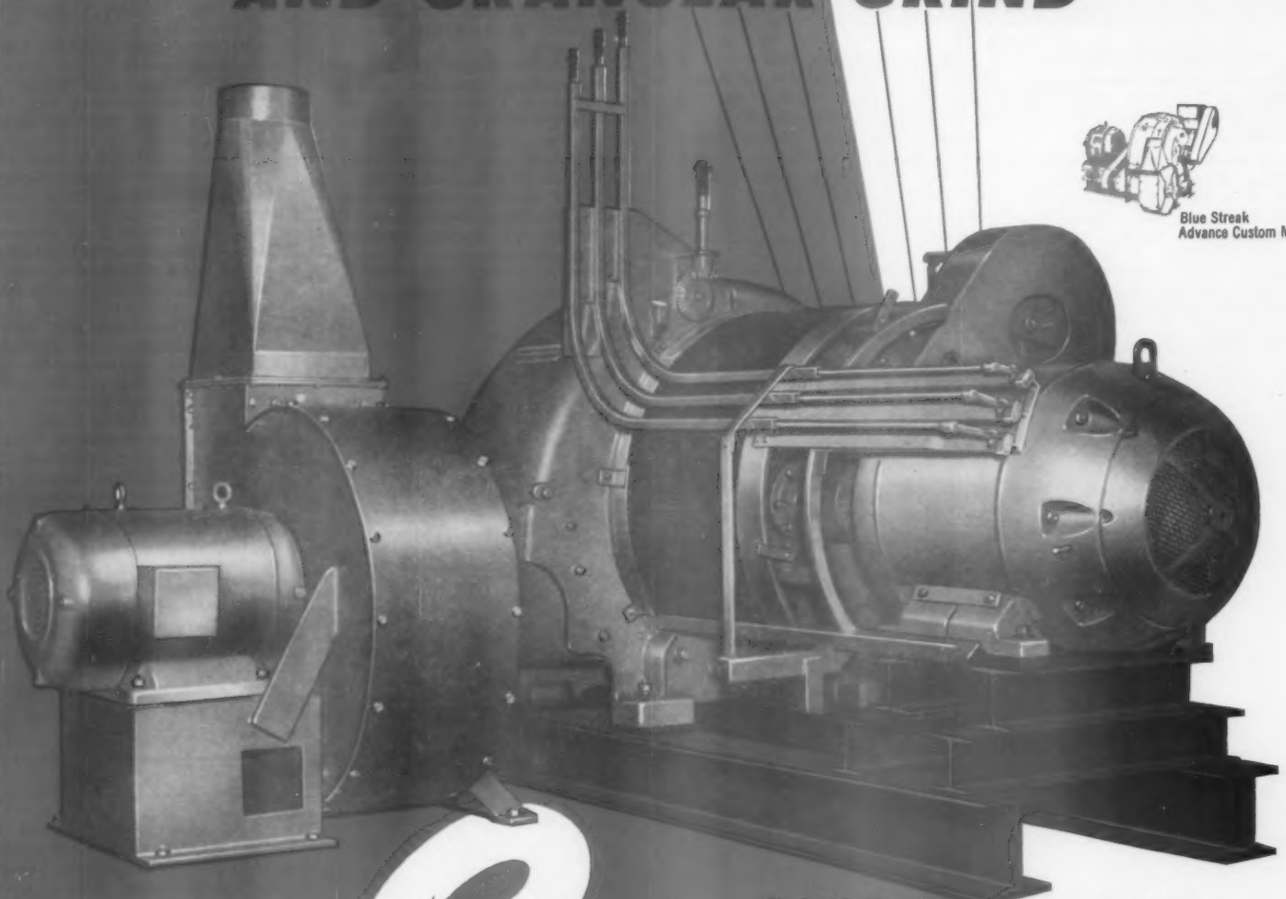
Blue Streak
Advance Custom Mill

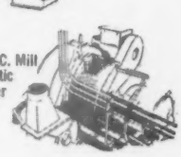


Blue Streak Dust-Proof
A.C. Mill with Pratermatic
Screen Changer

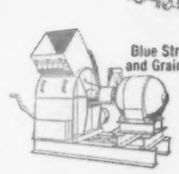
BLUE STREAK Prater

ADVANCE CUSTOM MILL

Prater Fibre Grinder
for Commercial Mills



Blue Streak A.C. Mill
with Pratermatic
Screen Changer



Blue Streak Hay
and Grain Grinder

ADVANCE DESIGN TO MEET THE CUSTOM MILLERS NEEDS—OF REDUCED OVERHEAD, LOWER MAINTENANCE AND EFFICIENT PRODUCTION

GRANULAR GRIND BY BLUE STREAK—THE STANDARD OF THE INDUSTRY

BUILT-IN HEAVY DUTY CRUSHER FEEDER FOR UNIFORM FEEDING OF SHUCKY EAR CORN

SIX SECOND REMOTE SCREEN CHANGER WITHOUT STOPPING MOTOR
AVAILABLE IN 1800-3600 RPM

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SEALED-FOR-LIFE ANTI-FRICTION BEARINGS

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PRATER engineers are available to help with suggestions, layouts, recommendations and mill surveys, without any obligation on your part. This valuable free help is yours for the asking. Write, phone or wire today!

The granular finished product of a BLUE STREAK MILL is free from floury fines and dust providing a better mixing quality for blending with concentrates and supplements; thus converting rations to extra pounds and added feeding profits.

PRATER PULVERIZER COMPANY

1537 South 55th Court
Chicago 50, Illinois

Convention Calendar

April 17-18—Tennessee Poultry Health School; Animal Science Bldg., University of Tennessee, Knoxville; conducted by Poultry Dept., University of Tennessee.

April 17-18—Seventh Regional Area Convention, National Renderers Assn.; St. Paul Hotel, St. Paul, Minn.; sec., Harold Weiss, Gulf Soap Corp., Arabi, Louisiana.

April 20—Nebraska Beef Cattle Feeders Day; University of Nebraska, Lincoln; Dr. R. M. Koch, chairman, animal husbandry department.

April 20-22—Beef Cattle Short Course; University of Florida, Gainesville; Dr. T. J. Cunha, head, Animal Husbandry & Nutrition Dept.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 21—Alabama Poultry Jubilee; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sec., Alabama Poultry Industry Assn., W. L. Walsh, Box 567, Montgomery.

April 21-22—Oklahoma Grain & Feed Dealers Assn.; Biltmore Hotel, Oklahoma City; sec., E. R. Humphrey, Box 809, Enid, Okla.

April 22—Alabama Poultry Industry Promotion Dinner; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sponsored by Alabama Poultry Industry Assn.; sec., W. L. Walsh, Box 567, Montgomery.

April 23-28—School of Executive Development in Business Management, Unit I; Continuing Education Center, University of Georgia, Athens; sec., Harold E. Ford, Southeastern Poultry & Egg Assn., 235 E. Ponce de Leon Ave., Decatur, Ga.

April 23-28—Grain Elevator & Processing Superintendents; Baker Hotel, Hutchinson, Kansas; sec., Dean M. Clark, 1115 Board of Trade, Chicago 4, Ill.

April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

April 28—Beef Cattle Day; Washington State University, Pullman; Dr. Irwin Dyer, Animal Science Dept.

April 28—Indiana Cattle Feeders Day; Purdue University, Lafayette,

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

June 19—Connecticut Poultry Day Program and Exhibit; University of Connecticut; William A. Aho, Extension Poultryman.

July 27—Technical Alfalfa Conference; co-sponsored by the American Dehydrators Assn. and USDA Western Utilization Research and Development Division; Western Regional Research Laboratory, USDA, Albany, Cal.; chm., Dr. G. O. Kohler, Chief, Division Field Crops Laboratory, Western Regional Research Laboratory, 800 Buchanan St., Albany 10.

Aug. 7-12—Texas Feed Microscopy Short Course; Memorial Student Center, Texas A&M College, College Station; E. E. Brown, Station Microscopist.

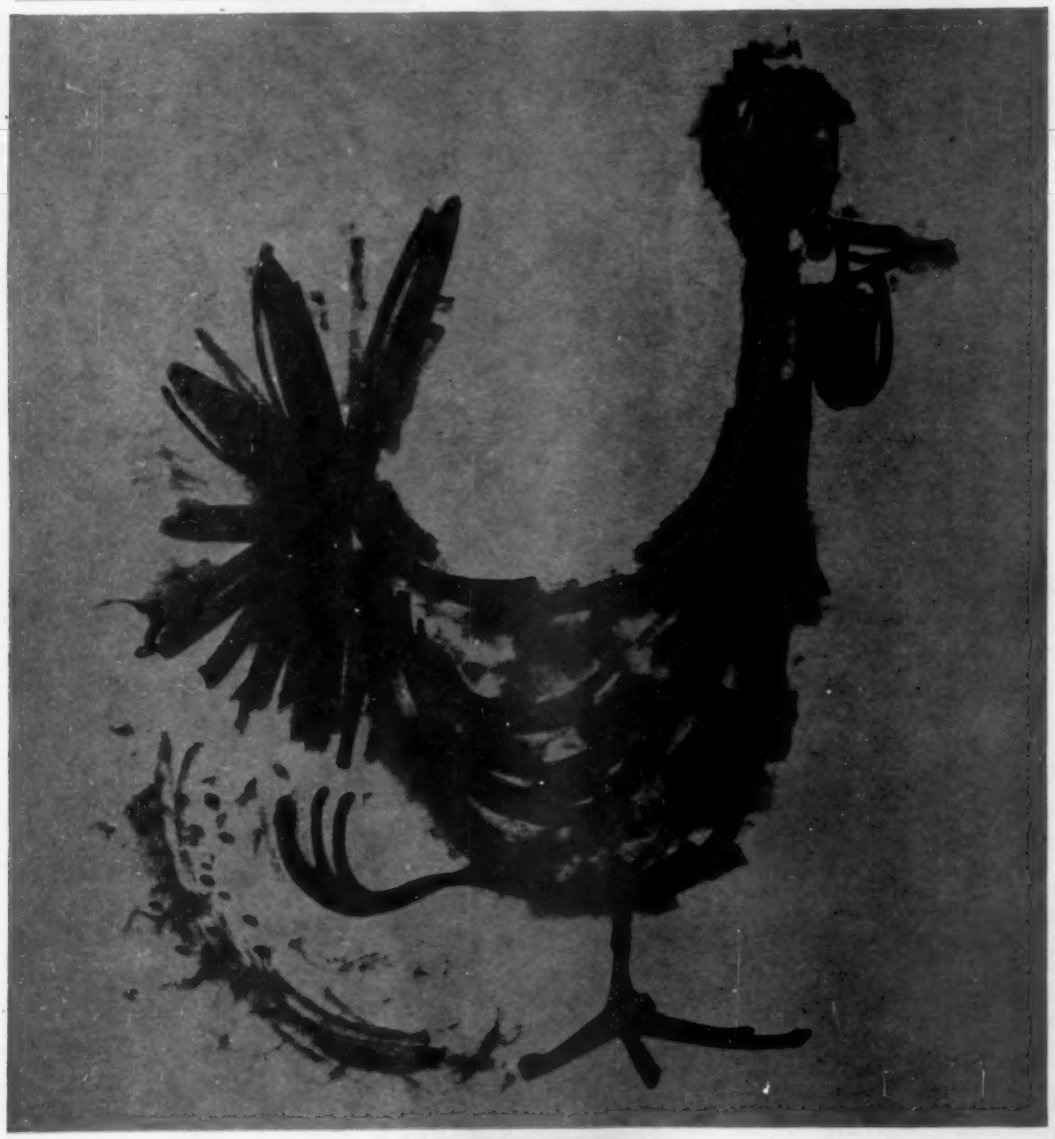
Sept. 11-12—Minnesota Nutrition Conference; Institute of Agriculture, University of Minnesota, St. Paul; chm., Dr. L. E. Hanson, Animal Husbandry Dept.

Sept. 19-27—International Conference on Fish in Nutrition; Washington, D.C.; sec., Dr. Erik Heen, Chief, Fisheries Technology Branch, Food and Agriculture Organization, Washington 25.

Dec. 7-8—Michigan Feed and Grain Dealers Assn.; Pantland Hotel, Grand Rapids, Mich.; sec., Nevels Pearson, Box 472, East Lansing.

1962

Feb. 9-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 67 E. Madison, Chicago 2, Ill.



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Phosphorus content is 18.50% min., calcium content ranges from 24.00% min. to 27.00% max., and fluorine content never exceeds 0.05%. You'll also like the optimum feed ratio you get from the high biological availability.

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weekly...only in
FEEDSTUFFS

CALENDAR FOR 1961-62

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Ind.; chm., Dr. W. M. Beeson, animal science department.

May 4-6—Panhandle Grain & Feed Assn.; Herring Hotel, Amarillo, Texas.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-16—National Cottonseed Products Assn.; Eden Roc Hotel, Miami Beach, Fla.; sec., John F. Moloney, 43 N. Cleveland St., Memphis 4.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 22—Des Moines Feed Club Field Day; Des Moines Golf and Country Club, Des Moines, Iowa; (hotel reservations) Reed Merrick, Sargent Calcium Co., 2525 Euclid Ave.; (tickets for banquet and show) Don Frantz, Nixon and Co., S.E. 21st and Maury.

May 22-23—Poultry Industry Sales Clinic; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

May 26—Oregon Beef Cattle Day; Oregon State University, Corvallis; chm., Dr. A. T. Ralston, Animal Husbandry Dept.

June 1-2—Arizona Ranch School and Cattle Feeders Day; University of Arizona, Tucson; Dr. Bruce R. Taylor, head, Animal Science Dept.

June 4-6—Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4.

June 5-7—Association of Southern Feed, Fertilizer and Pesticide Control Officials; Lafayette Hotel, Lexington, Ky.; sec., M. B. Rowe, 203 N. Governor St.; Room 304, Richmond 19, Va.

June 8-11—Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

June 9-10—Arkansas Poultry Festival; Little Rock; mgr., Arkansas Poultry Federation, John Haid, P.O. Box 1446, Little Rock.

June 11-14 — American Dairy Science Assn.; University of Wisconsin, Madison; chm., Dr. L. H. Schultz, dairy husbandman, University of Wisconsin.

June 12-13—Eastern Federation of Feed Merchants; Concord Hotel, Lake Kiamesha, N.Y.; sec., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 13-16—Northeastern Poultry Producers Council Egg Quality School; Pennsylvania State University, University Park, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

June 15-16—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Merrill Sather, 418 Peyton Bldg., Spokane 1.

June 15-17 — Delmarva Chicken Festival; Harrington, Del.; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

June 19-21—American Association of Feed Microscopists Annual Meeting; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 19-24—Feed Microscopy Short Course, sponsored by American Association of Feed Microscopists; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

June 29-30—Pennsylvania Poultry Federation; Pennsylvania State University, University Park; (room reservations) Russell Murphy; (program information) Glen O. Bressler, Room 105, Weaver Hall.

July 14-18—Georgia Feed Assn.; Grand Bahama Club, Grand Bahama Island; sec., W. E. Merritt, Suite 1-A, 361 E. Paces Ferry Rd. N.E., Atlanta 5.

July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

July 24-28—Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 2-4—West Virginia Poultry Assn. Convention and Festival; Moorefield, W.Va.; sec., Wilson Smith, Petersburg.

Aug. 3-4—National Soybean Processors Assn.; Edgewater Beach Hotel, Chicago, Ill.; sec., Wm. K. Self, 3818 Board of Trade Bldg., Chicago 4, Ill.

Aug. 7-9—Southeastern Management Roundtable; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce De Leon Ave., Decatur, Ga.

Aug. 9 — Science at Work, Open House and Reports by Staff Scientists; Connecticut Experiment Sta-

Fight HEART DISEASE #1 ENEMY
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NEW CHOR-MATIC
Ceiling Suspended
POULTRY FEEDERS
give you
a completely NEW method of automatic feeding

ELIMINATES PICK-OVER
ELIMINATES CROWDING
FEEDS MORE BIRDS BETTER
SAVES FEED—SAVES TIME—SAVES MONEY

here's why . . .

- Every pan has *fresh feed all the time.* No dirty, picked-over feed at end of line.
- Auger-type conveyor starts automatically . . . stops when pans are refilled. No clocks or manual control needed.
- Ceiling suspended . . . adjusts vertically for birds of all ages.
- Birds move freely around pans and under conveyor. No bunching . . . no crowding.
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CHOR-MATIC Monoline—single line feeder—makes automatic feeding practical for all poultrymen.

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LOWEST COST CALCIUM SUPPLEMENT FOR LAYING HENS—DOES A GOOD GRIT JOB, TOO.

Shellmaker is produced from high calcium limestone formed millions of years ago from shell and other calcareous deposits under the sea that one time covered the entire land area now known as the Mississippi River basin.

Shellmaker is slowly soluble in the gizzard to supply most effectively all the extra calcium the hen needs for building strong egg shells. It is also hard enough to do a good grit job as shown in feeding trials at several state experiment stations.

Write for information and prices today.

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520 SOUTH FIFTH STREET, QUINCY, ILLINOIS

PRESENTATION — Dr. James A. McCain, left, president of Kansas State University at Manhattan, is pictured here accepting a set of slides and sound on tape—"Opportunity Knocks—At Home Plate"—from Larry Younkin, president of the Kansas Formula Feed Manufacturers. "Opportunity Knocks," with individual state segments, has now been completed in addition to the Kansas pilot film on Oklahoma, Texas, Arkansas and Missouri, with Nebraska and Colorado expected to be completed within the next 30 days. The project was initiated and produced by Midwest Feed Manufacturers Assn. in cooperation with the land grant colleges in Midwest's eight-state area.

tion, Lockwood Farm, Mt. Carmel, Conn.

Aug. 13-18—School of Executive Development in Business Management, Unit II; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 21-22—Kentucky Feed & Grain Association; Brown-Suburban Hotel, Louisville, Ky.; sec., Jack Weber, Box 425, Lexington.

Aug. 24-26—North Carolina Feed Manufacturers Assn.; Cavalier Hotel, Virginia Beach, Va.; sec. McNair Evans, Box 428, Laurinburg, N.C.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Aug. 28-29—American Soybean Assn.; Claypool Hotel, Indianapolis, Ind.; Geo. M. Strayer, Hudson, Iowa.

Sept. 11-13—Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc., pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 13-14—Maryland Feed Service Conference; Chemistry Auditorium, University of Maryland, College Park; Wade H. Rice, Poultry Dept.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 24-26—Southeastern Feed Production School; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 Ponce De Leon Ave., Decatur, Ga.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 28-29—Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; Dr. E. L. Stephenson, animal industry and veterinary science department.

Oct. 2-3—Washington Poultrymen's Institute; Centralia Junior College; Dr. Leo Jensen, Poultry Science Dept., Washington State University, Pullman.

Oct. 3-5—Northeastern Poultry Producers Council Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 10-11—Iowa Poultry Convention; Veteran Memorial Auditorium, Des Moines; sec., Iowa Poultry Assn., LeRoy Kruskop, 535 E. Lincoln Way, Ames, Iowa.

Oct. 15-20—School of Executive Development in Business Management, Unit III; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 Ponce De Leon Ave., Decatur, Ga.

Oct. 23-25—Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 24-25—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 1—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 Walnut St., Madison 5, Wis.

Nov. 1-2—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 1-3—Cornell Nutrition Conference; Statler Hilton Hotel, Buffalo, N.Y.; chm., Prof. Douglas E. Hogue, Animal Husbandry Dept., Wing Hall, Cornell University, Ithaca, N.Y.

FEED HANDLING COSTS CUT with VIBRATORS

Feed men are finding they can materially cut operating costs by installing Cleveland Vibrators on bins, loading chutes, mixers and weighers.

When handled in gravity flow bins, grain tends to pack and bridge, stopping the flow and causing a needless waste of time. This plugging effect is worse when liquid fortifiers such as molasses are added.

The constant jiggling supplied by a Cleveland Vibrator keeps the feed in motion. There is no opportunity for the individual grains to stick to each other. Cleveland Vibrators eliminate plugging before it gets started.

For complete details, including prices, write to

THE CLEVELAND VIBRATOR CO.

2793-41 Clinton Ave., Cleveland 13, Ohio

HOW TO MAKE A ROLL OF FENCE BELLOW

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

Dec. 6-7 — Missouri Poultry and American Poultry & Hatchery Federation Midwest Quickie Convention; Hotel Continental, Kansas City, Mo.; sec., Missouri Poultry Improvement Assn., E. M. Funk, Box 568, Columbia, Mo.

1962

Jan. 29-31—Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 4-6—Wyoming Grain, Feed & Seed Dealers Assn.; Townsend Hotel, Casper, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 5-7—Association of Southern Agricultural Workers; Jacksonville, Fla.

Feb. 14-15—Pacific Northwest Feed Mill Production School; Benjamin Franklin Hotel, Seattle; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 16 — Washington State Feed Assn., annual convention; Benjamin Franklin Hotel, Seattle; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 20-21—Virginia State Feed Convention and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; sec., Virginia State Feed Assn., J. Paul Williams, 615 E. Franklin St., Richmond 19, or Prof. Paul M. Reaves, Dairy Science Dept., Virginia Polytechnic Institute, Blacksburg.

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

Researchers Say—

Calf Response to Antibiotics May Be Energy-Saving Effect

WOOSTER, OHIO—Increased growth response from antibiotics fed to calves may result from energy conservation in the rumen, researchers say.

Dr. J. W. Hibbs and Dr. H. R. Conrad, dairy scientists at the Ohio Agricultural Experiment Station here, have found that an antibiotic added to the ration of young animals affected the rumen microorganisms.

This basic research showed that in calves much of the decline in blood sugar or glucose, a body energy source, during the early weeks was the result of rapid reduction in the corpuscle or red blood cell glucose concentration.

"When it was found that calves fed the antibiotic maintained a higher blood glucose level, it was theorized that the antibiotic increased calf growth through conservation of energy resulting from restrained rumen fermentation associated with differences observed in the rumen microorganisms of the experimental compared to control calves," said Dr. Hibbs.

Blood sugar was found to decline rapidly in the control group after the milk intake was reduced at six weeks of age. The calves fed the antibiotic chlortetracycline maintained a higher glucose level during this period. This higher glucose level persisted after termination of milk feeding at seven weeks until 12 weeks of age when chlortetracycline was withdrawn from the ration.

"At this point," said Dr. Conrad, "the plasma glucose level of the experimental group returned to the level of the controls, suggesting that improved calf performance from antibiotic feeding was the result of its energy-sparing effects."

He went on to say: "In dairy herd replacements the practical advantage of the extra growth is questionable, since it was lost following removal of the antibiotic from the ration."

PHOSPHATE TALK—This scene—taken at the recent Portland, Ore., luncheon marking receipt of International Minerals & Chemical Corp's. first bulk shipment of Tricaphos from Japan—shows Capt. Homer T. Shaver, left, vice chairman of Portland's dock commission, visiting with George Moyer, vice president, IMC, Skokie, Ill.

New SPF Hog Assn.

DES MOINES — The Iowa Swine Repopulation Assn. has been formed by producers of specific-pathogen-free hogs in the state.

Organizers meeting here said the new group will promote the swine industry and SPF hogs in particular. Also, the group will set up the ground rules in selling breeding stock and will handle certification of SPF animals.

President of the new statewide group is William Conrad of Conrad.

BRAND

Only Keystone Steel & Wire Company does it! Each roll of fence made by Keystone is branded with red paint. This special trademark bellows RED BRAND! Your customers recognize this fence with the top red wire immediately. They know it's Red Brand—the fence that's Galvannealed® to outlast ordinary galvanized fence.

Proved in Performance . . .

Red Brand is a big seller because it's proved in performance. It has been a favorite among farmers for generations. Users of Red Brand agree it costs less to own the best fence because it lasts years longer. Red Brand is made of the finest copper-bearing, rust-resistant steel wire.

Strong Selling Support . . .

Naturally, you benefit from the wide popularity and quick identification of all Red Brand products, including Galvannealed Red Brand barbed wire and Red Top® steel fence posts. Keystone continues to give you strong selling support with advertising over farm radio and television and in national and local farm publications. All this means faster turnover and higher profits for you.

Why sell less when you can sell more of the best? It will pay to stock up on Red Brand today.

The only fence line that sells on sight

KEYSTONE STEEL & WIRE COMPANY
Peoria, Illinois

makers of Red Brand Fence • Red Brand Barbed Wire • Red Top® Steel Posts • Keyline® Poultry Netting • Non-Climbable Fence • Gates • Nails • Baler Wire

THE LINE OF LEADERSHIP

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USDA Describes Basic Research on Coccidial Cysts' Hatching Mechanism

WASHINGTON—A report on the basic research findings which are said to explain the hatching mechanism of coccidial cysts has been provided in a U.S. Department of Agriculture report.

The findings by USDA scientists, the report said, "may open the way for effective coccidiosis control in poultry and livestock." (Earlier story in Feedstuffs April 1.)

In this research, Dr. John C. Lotze and Robert G. Leek, parasitologists, were able to induce hatching of coccidial cysts in the laboratory after treating them with enzyme and bile. The researchers said the work indicates the possibility of control within the host by drugs that would interfere with hatching action, and of control outside the host by use of enzyme-like substances as sprays or other treatments to destroy the protective coverings of coccidial parasites in forage, feed or water.

The USDA release on the research goes on to say:

"Coccidiosis in animals or poultry develops only when the egg-like coccidia cysts hatch in specific areas of the host's digestive tract. Conditions that trigger this action include: (1) a proper combination of time and temperature in the host; (2) enzymatic action on the coccidial cyst wall in the upper part of the host animal's digestive system, and (3) presence of bile.

"Time, the scientists found, is a vital factor in coccidiosis infection. Their experiments proved that infective coccidial cysts, picked up in forage, feed or water, must be retained in an alkaline or not-too-highly acid condition in the host. Here, juices of the upper digestive tract prepare the cysts for hatching soon after they reach the small intestine. Otherwise the parasites will not hatch. The rumen of cattle, sheep, and goats, the crop of birds, and the upper part of the stomach of nonruminant animals may serve as suitable areas to prepare the cysts for hatching.

"Dr. Lotze and Mr. Leek made their discoveries by duplicating at the Beltsville Parasitological Laboratory certain of the conditions under which this parasite normally hatches in host animals.

"They first studied natural hatching of the parasites in sheep which were raised in isolation to prevent natural infection. The scientists suspected that a constituent of bile triggered the process. They found that the hatching process could be started by incubating infective cysts for several hours in the bile of sheep, goats, swine, rabbits, cattle, chickens or turkeys.

"Further research showed that human or sheep saliva, or a commercially prepared enzyme called steapsin, caused changes in the cysts that allowed the parasites to start hatching within minutes after the cysts came in contact with the bile.

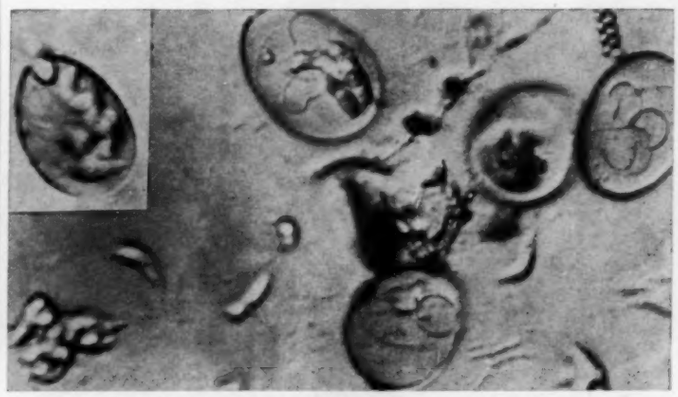
"Coccidiosis affects all poultry and livestock. Although the research was done primarily with sheep, Dr. Lotze and Mr. Leek expect that their results probably will apply to all the higher vertebrate hosts of coccidial parasites. It is commonly believed that the coccidia affecting sheep do not attack other animals, but it is possible, the scientists say, for animals to carry the infective cysts to susceptible hosts on their feet or bodies if not through their digestive tracts.

"Coccidial parasites attack various organs. In the developing stages they usually live in the lining of the intestine, destroying parts of it and causing diarrhea or scours and metabolism interference. Severely affected animals become unthrifty, fail to grow, and may die. In sheep, this disease may also cause wool-breaking, a condition in which the wool becomes thinned and readily breaks off.

"Coccidia are transmitted in cysts through the droppings of the host. The parasite in the cyst is free-living and microscopic in size. The cyst wall consists of a very tough membrane or membranes, which protect the parasite and enable it to survive for long periods outside the body of the host.

"The coccidia passed from an animal to the ground do not become infective until they have gone through a process called sporulation. During this process, the material within the cyst wall undergoes cell division to form eight sporozoites. This takes from one to 14 days or longer, depending on the species of coccidia and environmental conditions.

"For more than half a century scientists suspected that trypsin, the enzyme of the pancreas, was the agent that triggered hatching of coccidia in higher animals. A recent study indicated that the outer layer of the cyst wall had to be cracked or broken before the trypsin could enter. It was then assumed that the cyst wall became broken either from changes in moisture outside the host, or from muscular action of the digestive tract within the host. The ARS experiments have presented a more plausible explanation for the mechanisms involved in the hatching of the coccidial parasites."



PHOTOMICROGRAPH—This photomicrograph shows coccidia hatching after being treated with an enzyme and bile. This work by USDA parasitologists, said the government agency, marks the first time that man has been able to induce hatching of coccidial cysts in a laboratory by this process. (USDA photo.)

COCCIDIOSIS RESEARCH—In conducting research on coccidiosis, USDA parasitologists raised sheep or goats in isolation to prevent accidental infestation. Free of infestation, the sheep and goats were used in tests leading to discovery of conditions that trigger the hatching of coccidial parasites. (USDA photo.)

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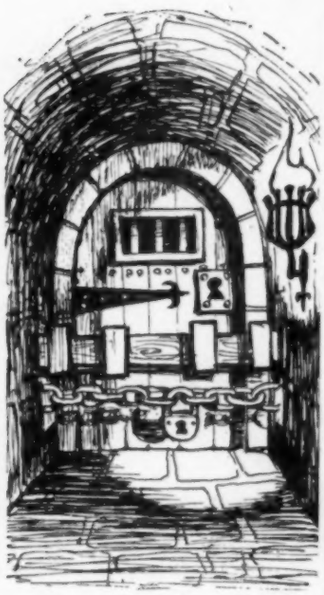

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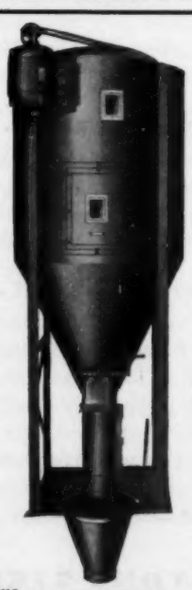

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WRITE FOR BULLETIN No. 625 giving dimensions, specifications and performance data on the Eureka Vertical Batch Mixer.

Ag Secretary Freeman To Speak May 18 at Kansas State Event

MANHATTAN, KANSAS—Orville L. Freeman, secretary of agriculture in the Kennedy Cabinet, has accepted an invitation to deliver a major address at Kansas State University, Manhattan, May 18, President James A. McCain announced.

Mr. Freeman, former governor of Minnesota, will address the annual Kansas wheat field day and participate in the dedication of K-State's new flour and feed milling wing.

Because of the great interest anticipated in Mr. Freeman's remarks, Dr. McCain said the secretary of agriculture will deliver his address in Ahearn fieldhouse.

This will be the first visit by the secretary of agriculture to the K-State campus since Clinton Anderson was on campus in the late 1940's.

The new K-State flour and feed milling wing, now nearing completion, replaces facilities destroyed in the East Waters hall fire in 1957. While installation of new equipment is not yet completed, some of the offices and research laboratories will be occupied soon. Student instructional facilities will not be ready until next fall.

The K-State facilities for student instruction and research in the areas of flour and feed milling include such things as pilot plant equipment in flour milling, formula feed manufacturing, and in baking.

Large delegations representing the grain trade, and the milling, baking, and feed industries, are expected to attend the wheat field day and the new flour and feed milling wing dedication. Dr. McCain said that these groups have contributed equipment valued at $250,000, plus some $280,000 in cash, to assist in restoration of the flour and feed milling facilities.

A special train will bring industry representatives from Kansas City to participate in the dedication and field day events.

Success Reported With Protein Block Operation

BOZEMAN, MONT.—Good success has been reported in the manufacture and sale of protein and mineral blocks produced at a relatively new installation in the Bozeman feed plant of the Montana Flour Mills Co.

The plant has been turning out 20 and 40% protein supplement blocks for cattle and sheep on range, plus mineral blocks. Production of the blocks was started in December.

Demand for the blocks has been "very good," according to Bill Fluegel of the Great Falls headquarters office and Allen Turvey of Bozeman. The mill superintendent who is responsible for the block production is Ben Thomas.

Ben Thomas, superintendent of the Bozeman feed plant of Montana Flour Mills Co., checks the operation of the A. E. Johnson block press. A protein block is being conveyed from the press to the packaging table.

The 20% and 40% protein blocks supply supplemental protein and other nutrients for cattle and sheep on range or being fed poor quality roughage.

The block form and salt content of the blocks limit the daily consumption under free choice feeding. The analysis shows a minimum of 12% and a maximum of 15% salt. The feeding directions call for allowing 1 lb. for cattle and 0.25 lb. for sheep per head per day for the first few days. Then the blocks are fed free choice.

The same installation also is used for making 50-lb. mineral blocks for beef and dairy cattle, sheep and horses.

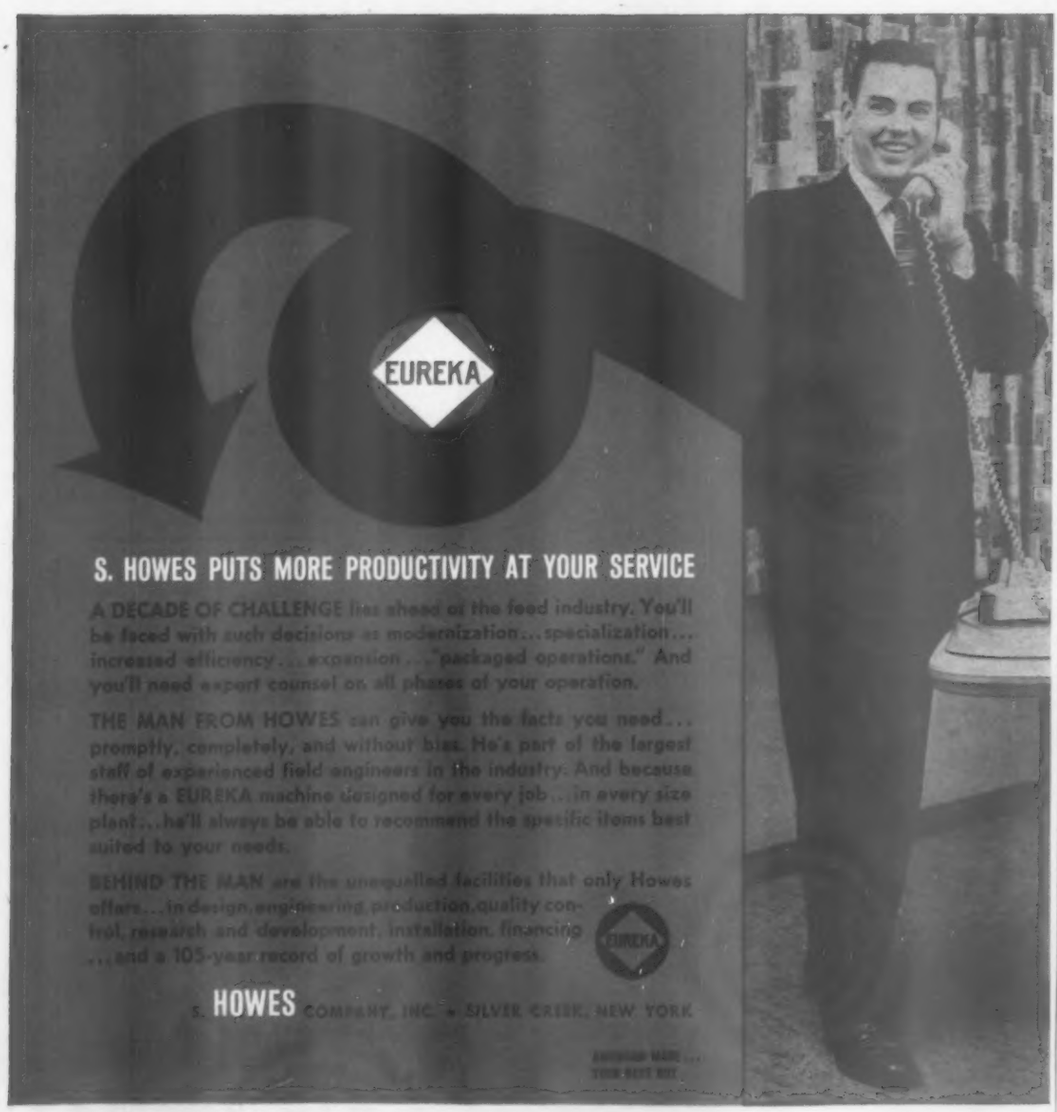
The protein blocks, weighing 33⅓ lb., are made on an A. E. Johnson block press, which provides 1,200 lb. of pressure with the hydraulic cylinder. The production rate is about two blocks per minute, said Mr. Thomas. The blocks initially were wrapped, but plans were being made to have the blocks go into self-glued boxes.

In the production process, Mr. Thomas explained, feed is augered to an O.K. bagging scale. When the proper weight is reached, an Airslide gate closes. The feed then goes through a hopper and into the block chamber. The feed has cane molasses content, Mr. Thomas pointed out.

From the block press, the blocks are moved on a Strong-Scott conveyor to the packaging table.

Allen Turvey (left) and Bill Fluegel of the Montana Flour Mills Co. feed sales department look over a wrapped and labeled protein block.

IN THE CRUCIAL 60's



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Feed Firm Study Shows Fish Meal Response

WASHINGTON — A feed company's study to test various levels of fish meal in commercial type broiler rations was described at a field report session at the Maryland Nutrition Conference.

Edgar Quillin of the Berlin (Md.) Milling Co. reviewed other research information on the use of fish meal in broiler feeds and then outlined the results of his firm's study.

Based on the results, he said: "I feel that as much good quality fish meal as can economically be incorporated in the ration can and should be used in broiler feeds for best results. The amount that can be used naturally depends to a large extent on the availability of the product to the feed manufacturer and also on price."

In the Berlin Milling study, a growth response was obtained as the amount of fish meal was increased in the rations, Mr. Quillin noted, and feed was utilized more efficiently in all but one case as the level of the fish meal was raised.

At the outset of his comments on the study, Mr. Quillin noted that "fish meal has been very economical for the past six months or more." As of the last of February, he pointed out, fish meal was selling for $90 to $95 per ton on the shore. Partial nutritional worth calculations (Combs and Romoser method) showed it to be worth $124.50 at that time, giving a value above cost amounting to $29.50 per ton.

Four Treatments

In the study, four treatments with different fish meal levels were used to determine at what level of fish meal maximum growth would be obtained.

(See the accompanying table for treatments and results.)

The treatment No. 1 diet, containing 2½% fish meal, was fed from start to finish. It contained no other animal protein. Calculated analysis was 22% protein and 1,421 calories of metabolizable energy per pound.

For treatments 2, 3 and 4 basic rations were the same in each of the three treatments, with fish meal levels being adjusted to the desired amount. The diet in treatment No. 1 was not the same as the diets used in the other three treatments. Both starter and finisher rations were used in treatments 2, 3 and 4. These rations contained poultry by-products meal and meat scraps in addition to fish meal as sources of animal protein.

The rations in these treatments were kept isonitrogenous (and had almost identical protein) and isocaloric by adjusting fat, soybean meal and corn. Calcium and phosphorus were also kept alike by adjusting limestone and phosphorus supplementation.

Fish Meal Study—Berlin Milling Co.
Nine-Week Data

Treatment No.	% Fish meal	Av. wt., lb.	F/W
1	2.50	3.44	2.16
2	6-S—4-F	3.56	2.10
3	7.5-S—5-F	3.57	2.13
4	10-S—7.5-F	3.66	2.13
All treatments, all levels		3.56	2.15

S—Starter; F—Finisher.

Here are the rations used in treatments 2, 3 and 4:

Treatment 2—Contained 6% fish meal in starter and 4% in finisher. Starter calculated to contain 23% protein and 1,440 calories of metabolizable energy per pound; C/P, 62.6:1. Finisher calculated to contain 21% protein and 1,455 calories of M.E. per pound; C/P, 69:1.

Treatment 3—7½% fish meal in starter and 5% in finisher; same amount of protein and energy as in rations in treatment 2.

Treatment 4—10% fish meal in starter and 7½% in finisher; same amount of protein and energy as in treatments 2 and 3.

All rations were formulated to be adequate in all known nutrients. Methionine was not alike but was calculated to be adequate.

Floor pens were used, and 500 birds were started in each pen. Each treatment was replicated four times—2,000 birds per treatment. Straight run Vantress-Arbor Acres broiler chicks were used. The birds were vaccinated in the eye at one week for Newcastle and bronchitis and debeaked and were sprayed for Newcastle at four weeks. Normal management and care were used.

Responses Noted

The birds were weighed and feed conversion calculated at nine weeks. A growth response was obtained as the amount of fish meal was increased, Mr. Quillin noted. Feed was utilized more efficiently in all but one case as the fish meal level was raised. Birds on the 2½% fish meal rations (treatment 1) used their feed a little more efficiently than those on treatment 2 (6 x 4% fish meal).

Mr. Quillin said: "Since the rations were kept isonitrogenous and isocaloric and the ingredients were kept approximately the same, the responses in treatments 2, 3 and 4 must be due to the higher levels of fish meal. This could be due to improved amino acid quality of the ration or to the unidentified growth factor activity in fish meal."

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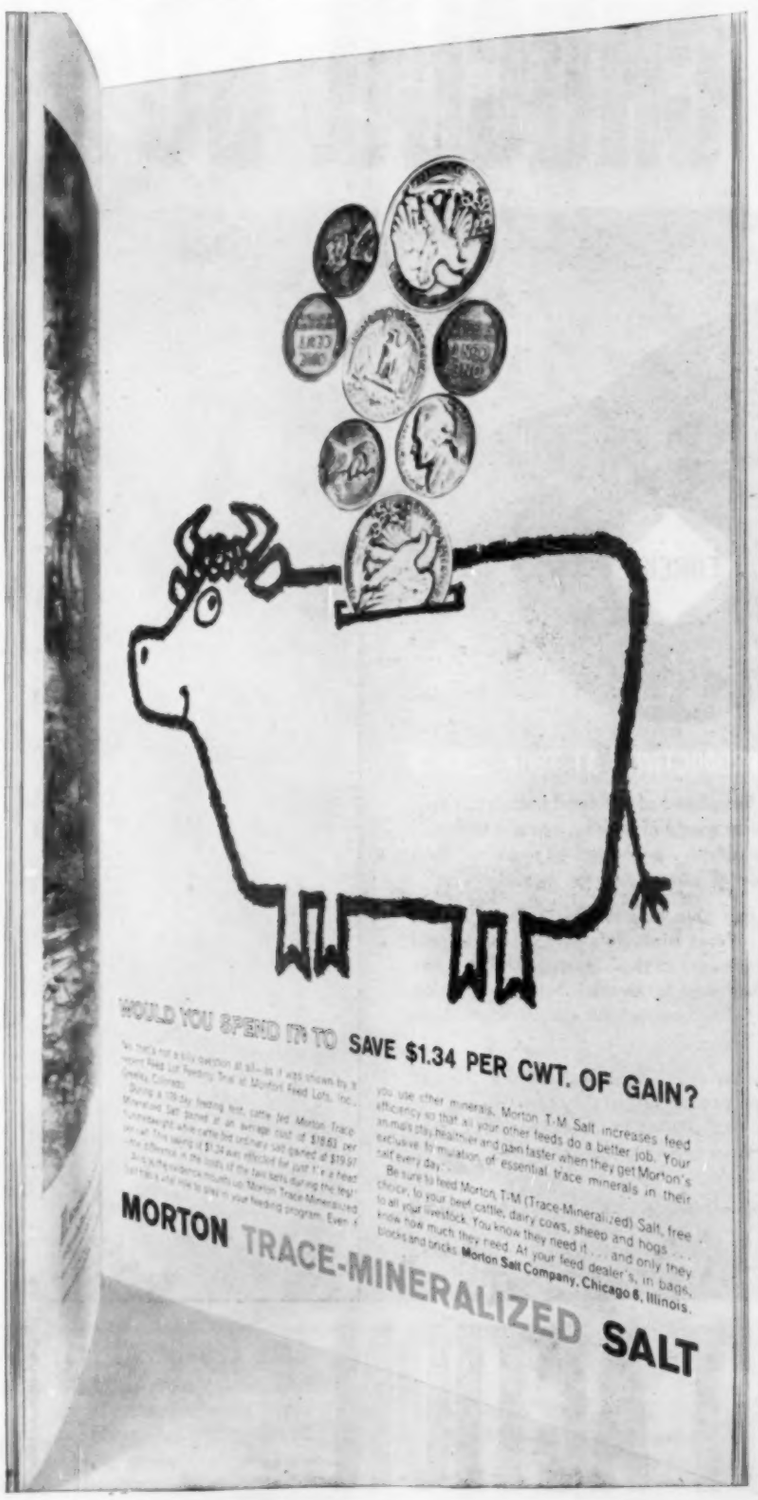

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Wholesaler, Feed Firm in First Stages of Memphis Egg Project; Present Rate Is 22,000 Daily

By Ed White
Special Writer

Fancy fresh eggs are moving at the rate of about 22,000 a day into the Memphis market from and through a new egg production and marketing project of a local wholesale grocery firm and Nutrena Mills, Inc. The venture is only in the first stage of operation and ultimately may market as many as 70 million eggs a year.

Initial production is coming from the nucleus of the project, M & H Farms, Inc., located near Oakland about 30 miles east of Memphis. There layers work in high-density, controlled-environment houses. Eggs are being marketed by Malone & Hyde, Inc., the wholesale grocer, through some of its 327 associated stores.

With 30,000 layers in production on the farm and 10,000 replacement birds housed there the physical facilities allow for the increase to 90,000 layers and 30,000 replacement birds. Officials plan to reach this level by August. Participation by independent producers later is expected to raise the number of layers to 300,000.

Stockholders of the project include officials of Malone & Hyde and owners of some of the firm's associated stores. Nutrena supplied building plans, arranged for contractors and equipment, supervised construction and is furnishing technical assistance in getting the egg program under way.

"Whys" of the Project

E. C. Fuller, Nutrena vice president, cited two main reasons for the wholesale grocery firm's entering the egg production field. "One, the stores were anxious to have fresh, quality eggs. And two, a central unit provides the nucleus of high production necessary to implement the marketing program. Independent producers might need as long as two years to build to an economically feasible volume.

"Under this program," Mr. Fuller continued, "M & H is producing what the customer wants, when he wants it; and producing at a good volume at maximum efficiency."

Joseph Hyde, Jr., head of both the wholesaling firm and the egg farms, commented, "Many of our associated stores are or have been supplied individually by independent producers, but supplies change as flocks come into or go out of production, and the volume of top quality eggs has not been dependable enough to justify a market-wide sales promotion program. The stores agree with us that egg producers, retailers and consumers all will gain considerably if one brand of truly superior quality can be offered for sale and promoted in the entire Memphis market.

"Replacement pullets started throughout the year will insure constant egg outturn in a volume sufficient to justify advertising our brand in the market," Mr. Hyde said. "The brand preference and volume we build will provide cooperating independent producers with a better market than they can obtain by themselves."

Eggs from all flocks are graded and packaged in quick-folding cartons at the M & H Farm processing plant. Then they are trucked directly from the plant's cooling room in 30-carton cases to the food stores.

On the return trip the truck carries 25,000 lb. of bulk feed from the Nutrena mill in Memphis. The feed is blown from the truck into storage tanks at each layer house and augered into feeders running the length of the house. A mercury switch in the last feeding pan turns the line on and off automatically. Water, light and ventilation also are automatically controlled.

Mr. Fuller estimates that each laying hen will consume 100 lb. of feed during her productive life of 13½ months—which multiplies into 4,500 tons of feed per house. Replacement birds will eat from 18 to 20 lb. of feed before moving into the laying house.

The first birds, which have been in production for about three months, were housed just six weeks after construction was started. The layer operation is going into production by stages so there will be a continual supply of eggs of various sizes.

3-House Units

The 10,000-bird houses are hooked together in T-shaped units of three so eggs can be collected in one room by conveyor belts from all three houses. Collections are made three times a day and are staggered so that one person handles the collections from 30,000 layers. The egg belts have a capacity of 12 cases an hour. Egg flats are color coded by house to aid in immediate location detection if production drops.

John Boyce, Nutrena's poultry products sales manager, says that when the farm is in full production, only 13 persons, including egg processing and delivery personnel, will be needed to operate it. He says that later plans call for the eggs to be taken directly to the plant in the center of the layout by conveyor belts. "We hope to have the eggs washed, graded, candled and cooled by the time they get to the plant for packaging," Mr. Boyce said.

Currently the eggs are washed automatically at the egg plant, inspected on a flash candler, packaged and immediately cooled. Eggs often are in the food stores the day after collection. Orders are placed at the farm, eggs are delivered direct to the stores, and outdated unsold eggs are removed from the store by the farm truck driver.

Quality Kept Constant

Rigid production procedures are followed to insure a constant quality egg. Independent producers joining the marketing program must agree to follow M & H's production system so consumers may be offered an egg uniform in size, color and quality. Since M & H uses Nutrena feed exclusively, it is expected that independent producers will follow suit even though they will not be required to.

Independent producers who can qualify under the Tennessee Fancy Fresh Egg program would be eligible to enter the Malone & Hyde marketing system. Among other things they would be required to collect eggs three times a day, refrigerate the eggs from the time they are gathered until they are sent to the store, maintain a Haugh rating of at least 72 and practice other normal quality control measures.

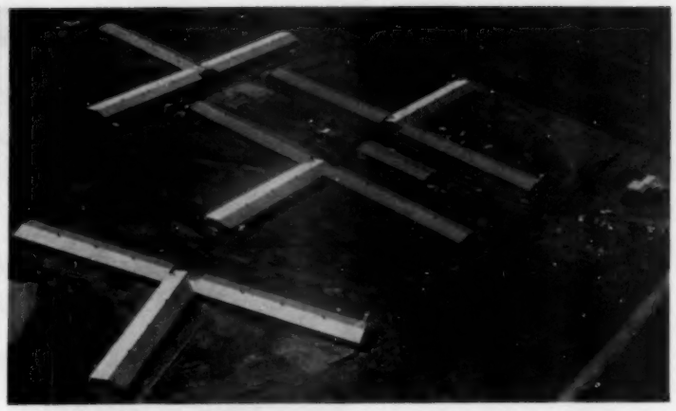
Mr. Fuller commented, "Independent producers must meet marketing specifications of Malone & Hyde, including quality and yolk color. Nutrena has the feeding program designed to meet these specifications."

Water Power, Ventilation

Water for the entire operation comes from wells which are connected so that if one goes dry the water supply would not be cut off. Diesel-driven generators have been set up to supply electricity to the layer houses in the event of a power failure. A buzzer alarm system has been installed in the manager's house to warn of power failures on the regular lines.

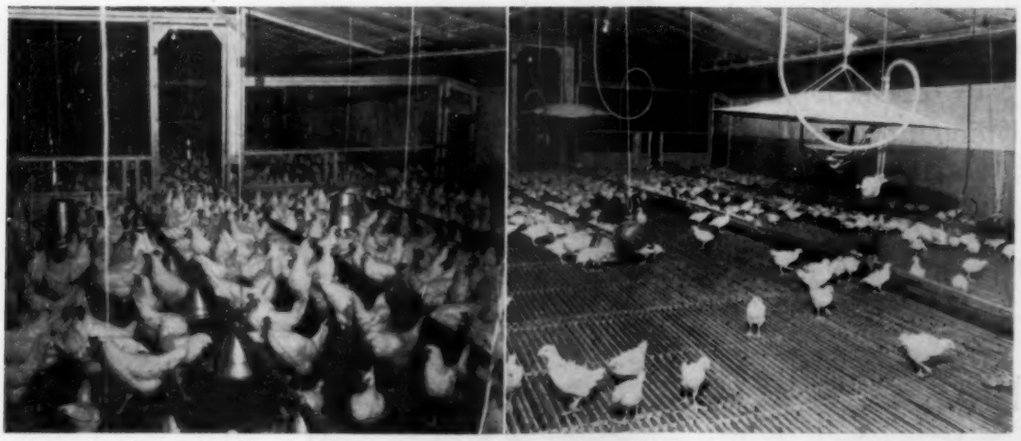
A unique ventilation system for the windowless pole-type houses allows space per bird to be reduced to ¾ of a sq. ft. Thermostatically controlled fans force air from the building and atmospheric pressure forces fresh air in. The house is constructed so that one layer of air circulates under the roof in a five inch space between the roof and a layer of insulation. Other air is distributed evenly and circulated throughout the house.

With this system temperatures in the laying houses can be maintained above 50° F. the year round. Air is exchanged about every eight minutes



HOMES FOR 120,000 CHICKENS—In this aerial view of the Malone & Hyde operation near Memphis, Tenn., are four T-shaped three-house units with a total capacity of 90,000 layers and 30,000 replacement pullets. The birds are laying and being raised in Nutrena Feeds' recently introduced "high density layer system" houses. Eggs are cooled and processed in the smaller building between the three upper layer units. House at right is the farm manager's home.

BULK FEED—Trucks bring bulk feed from Nutrena's Memphis mill to these layer houses on the M & H farm near Oakland about 30 miles east of Memphis. The feed is blown from the trucks into storage tanks at the end of each layer house, then augered into feeders running the length of the house. A mercury switch in the last feeding pan turns the line on and off automatically.



PUSH BUTTON ENVIRONMENT—Nutrena Feeds' new "high density layer system" utilized on M & H Farms near Memphis employs highly automated equipment to ventilate, feed, water, nest, light and gather eggs. In the first picture are shown a group of closely grouped birds in one of the M & H 10,000-bird houses. The second picture shows replacement pullets in an M & H brooder house. These four-week-old birds are scheduled for assignment to one of M & H's nine "high density" layer houses. They will be moved to the layer house at 20 weeks and will begin production at from 23 to 26 weeks of age.

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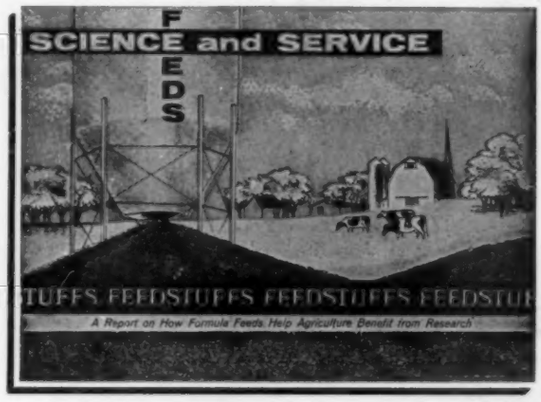

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Cattle Nutrition	Swine Rations	Improved Feed Formulation

***Science and Service* is a summary of special Golden Year articles in observance of American Feed Manufacturers Association 50th anniversary. Twelve outstanding feed authorities contributed to the reports which appeared in Feedstuffs during the past year and from which this booklet was compiled.**

A limited number of reprints of* Science and Service *are available now at a single copy price of 50¢. Larger numbers available at quantity prices, ranging downward from 35¢ each for 10 to 100, 25¢ each for 100, to 10¢ each for 1,000. Imprinting a three line company signature on back page of quantities over 100—$7 minimum. Inquire about additional quantity discounts.

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UNIQUE FEATURES—Interior of central egg room on M & H farm is shown in picture at left. Operator is using plastic flats to gather eggs from 90,000 hens. Eggs are delivered to this one room from houses by an automatic conveyor belt. In the picture at right, John Boyce, Nutrena poultry products sales manager, points to ventilation system which is built into the roofs of the Nutrena-designed "high density" layer houses. Atmospheric pressure brings air into the house and fans provide air circulation and exchange.

during the winter and can be exchanged in less than two minutes during the summer.

The buildings are lined with a light colored plastic material. This makes possible a higher level of light intensity with a lower level light source and it is easier to clean than other conventional forms of wall covering.

The replacement birds are kept under constant light for the first two weeks. Then light is limited to two 3-hour periods until the sixteenth week when the darkness is gradually reduced until the birds have eight hours of constant light. This is increased by 18 minutes per week for the laying life of the birds.

Seven community type nests are provided for each 500 birds in the 240 x 40 ft. laying house. It is so constructed that a bird is never farther than 8½ ft. from water, food or a nest.

Researched by Nutrena

The houses were on the planning boards for three years and were developed at Nutrena's Elk River, Minn., research farm. The completely automated house represents an investment of about $3 per bird. According to Mr. Boyce, this compares to about $2 a bird for poultry houses of the usual open-type construction of the South and $4-6 a bird for most other automated poultry houses.

"Automation is almost a must," Mr. Boyce observed. "With a lower-cost house one man cannot do all the work involved in handling a large number of layers. He has to hire help which cuts deeply into his profits. With automation he can get a better quality egg in larger quantities because of the controlled light and environment. An improvement of as little as 1% would pay for the equipment."

Plan Southeast Event

AUBURN, ALA.—Preliminary plans for the 1961 Southeastern Egg Quality and Marketing School were made at a meeting held at Auburn University recently, according to Dr. Claude Moore, chairman of the event. Dr. Moore is head of the Auburn University poultry science department.

The four-day school, designed for the inexperienced as well as the professional egg grader, will be held on the Auburn campus July 24-28.

Jointly sponsoring the annual Southeastern school this year are: Alabama Department of Agriculture and Industries, U.S. Department of Agriculture, Alabama Poultry Industries Assn., Auburn University Extension Service, Auburn poultry science department and the Southeastern Poultry & Egg Assn.

Illinois Reports on Year-Round Drylot Feeding of Dairy Cattle

URBANA, ILL.—Year-round drylot feeding for dairy cattle, a practice common in many western states for years, is starting to take hold among Illinois dairymen—generally with promising results.

University of Illinois dairy scientist Leo Fryman estimates that more than 40 Illinois dairymen have successfully switched to drylot stored feeding.

Mr. Fryman says these dairymen agree that the key to a successful summer drylot feeding program is to feed the cows as much high-quality forage as possible.

Last year University of Illinois dairy scientists studied records of 24 Illinois dairymen who had had one to three years' experience with year-round drylot feeding.

The records showed that total yearly production was no greater in these herds than in herds on pasture or daily green-chop feeding programs.

But production in the drylot herds was more uniform throughout the year. Mr. Fryman says this uniform production was undoubtedly due to the consistently high-quality forage the drylot herds received.

In general, the University of Illinois survey showed that the 24 farms on stored feeding used less land to grow the forage for one cow than farms using other summer forage-handling systems.

The advantage in higher yields over daily green-chopping and daily rotational grazing was small. However, the survey showed a considerable yield advantage over continuous grazing.

Mr. Fryman says it is impossible to make a flat statement about whether a particular farm should use stored feeding. The kind and amount of equipment on hand for winter feeding, the farm size, topography and cropping system, herd size, and the amount of labor available must all be carefully considered in making a decision.

One way to approach the problem is to consider that when less land is required to grow forage for the herd, more land will be available to grow high-cash-value crops. Income from these crops will add to the gross income from the farm.

But Mr. Fryman warns that the extra income from these crops must be more than enough to pay for the extra equipment and labor required in a stored-feeding program.

"We have found CocciVac® the only effective way to control cocci." Monroe C. Babcock

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February 1, 1961

Dorn and Mitchell Laboratories, Inc.
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Sincerely yours,

MCB/b

Monroe C. Babcock

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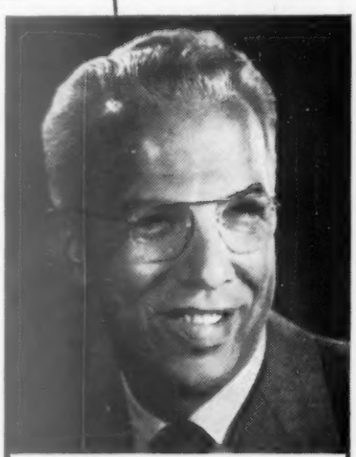
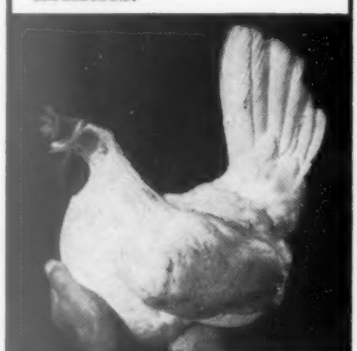


Mr. Babcock is one of America's leading breeders. His Babcock Bessies and Bonnies have long been noted for their profit-making abilities.



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Feeds, Disease Control Topics At Short Course for Service Men

By Special Correspondent

RALEIGH, N.C.—Poultry and livestock management, nutrition, disease control and prevention and mutual problems were among topics in the first phase of the 12th annual Field Service Men's Short Course held here recently.

Sixty-nine representatives of the feed industry attended the meeting held on the campus of North Carolina State College.

A second phase of the program was held in conjunction with the annual veterinarians' conference.

Highlighting the program was a panel discussion on managerial changes dictated by federal inspection. C. F. Parrish, extension poultryman, served as moderator. Panelists included Dennis Ramsey, Ramsey Feed Mill, Rose Hill, and Dr. H. W. Garren and Dr. F. R. Craig, both of the poultry science department.

Mr. Ramsey, a leader in the development of eastern North Carolina's broiler industry, had kind words to say about the new federal poultry inspection program.

"The inspection program," he began, "has awakened the poultry industry to things it should have been doing all along."

He said that he had no magic formula for keeping condemnations to a low level, but he did offer three suggestions to help: secure good chicks, feed good feed, and practice good management.

Mr. Ramsey pointed out that there are many feeds on the market, but a good feed must be backed up by research. He stated that lack of ventilation is one of his biggest production problems.

"We have some producers who can't understand why they should pour coal in the heater and open windows at the same time," he said.

In conclusion, Mr. Ramsey told the field service men that perseverance is the key to the future success of the broiler industry in North Carolina.

Dr. Craig repeatedly emphasized the importance of heat and ventilation in keeping condemnations low. "When disease is present," he explained, "the demand for heat goes up. This situation is much like a person who has a cold wanting a warmer room than a person without a cold."

Two of the speakers discussing livestock were Dr. A. J. Clawson of the college's animal husbandry section and Guy S. Parsons of poultry extension.

Brood Sow Nutrition

Dr. Clawson spoke on brood sow nutrition and factors involving reproduction.

He stated that proper nutrition of the breeding female should provide for or make maximum ovulation possible, allow maximum fertilization, provide for maximum embryo survival, provide for optimum or maximum lactation and possibly allow for maximum disease resistance.

"A ration that provides all the necessary requirements of the animal during the reproductive cycle," he said, "is most always more economical than a ration deficient in any essential nutrient."

Pointing out research in the field, he reported that a sequential feeding plan involving high and low planes of nutrition at certain stages of the reproductive cycle favors maximum reproductive performance.

"At present," he added, "it is recommended that gilts should weigh 250 to 275 lb. at eight months (breeding age), and that they should gain 100 lb. during gestation. Missouri workers have shown that excessive fattening during the gestation period is associated with increased embryonic death in gilt litters."

Forage Testing

Mr. Parsons reported in the North Carolina Forage Testing Program. He said that in recent years, it has become evident that the educational efforts in feeding should be geared a little more in the direction of improving roughage quality. This testing program is directed toward this goal.

Mr. Parsons said in the fall of 1958, chemical analysis program was start-

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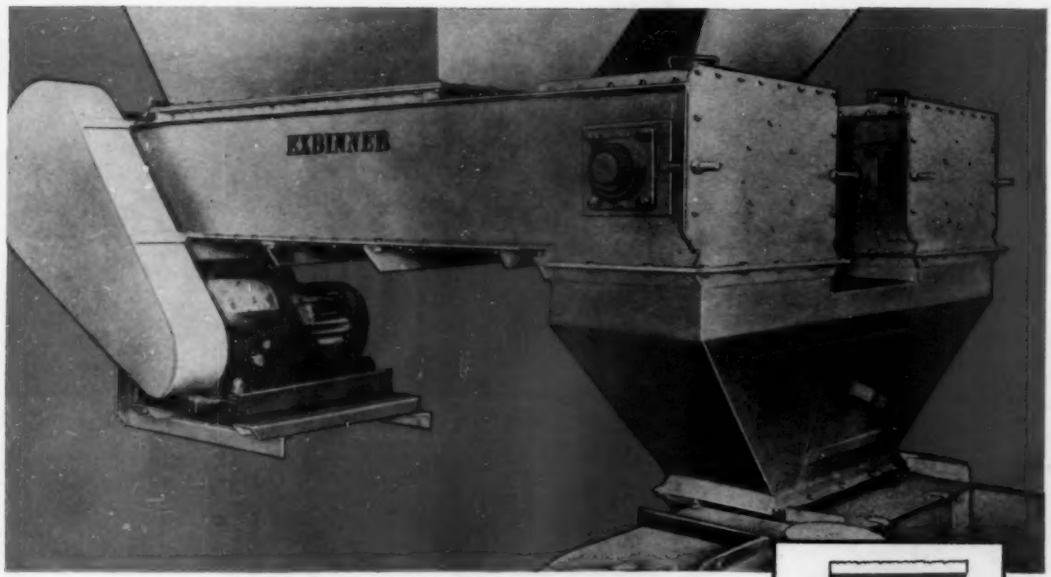

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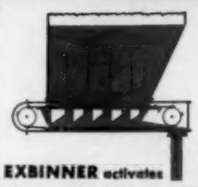

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ed in 11 of the 100 counties in North Carolina. Under the program, the county agricultural agent is furnished the necessary forms and supplies, he said. The agent supervises the actual taking of the sample. Each sample is packed individually in a heavy insulated bag for mailing to the department of agriculture laboratory. The agent and farmer complete a form which accompanies the sample giving information about fertilization, cultural practices, harvesting and storing methods and other details that might have influenced the quality of this particular feed.

The chemical analysis is run in the department laboratory and from the results, a quality evaluation is made. The report is mailed back to the farmer showing per cent of protein, total digestible nutrients, crude fiber and net energy contained in the feed. For silages, a moisture content is also reported. Normally the results will be back from the laboratory in about 10 days to two weeks after mailing, he commented.

Mr. Parsons pointed out that the analysis of individual farm grains for dairymen who mix their own feed offers real possibilities for educational work as well as savings for the dairyman.

At present there are 42 counties that are sending in samples to be analyzed and it is hoped that others can be added as more facilities become available, he stated.

Total Animal Health

Dr. H. C. H. Kernkamp, visiting professor at North Carolina State College, opened the joint program with the veterinarians with a discussion of the total animal health program.

"A total health program," he began, "is one that has for its objective the breeding, feeding and marketing of sound, vigorous and healthy livestock and poultry. This means a program which is aimed at the prevention and cure of disease from all causes."

Dr. Kernkamp pointed out the value of combined conferences for feedmen and veterinarians. "It is bringing about a fuller appreciation of each other's sphere of service to the livestock industry. Both have important functions to perform, functions that are complementary. The feed supplier cannot help but know that healthy animals will consume more feed than unhealthy or sick animals."

Role of Veterinarian

Dr. D. E. Hightower, veterinarian from Jefferson, discussed the role of the veterinarian.

"There are problems," he began, "that divide us and there are common objectives that unite us. To ignore the problems that confront us will not ease or erase their being, but magnify their complexity. To come together in meetings such as this and discuss the common objectives together will make us cognizant of how badly we need to combine our efforts and work together."

The veterinarian, he pointed out, serves animal agriculture by diagnosis, preventive medicine programs and treatment of diseases. Through the trained service of his companies, the salesman can deliver feeds that are balanced in a variety of formulations to meet practically any nutritional need. The veterinarian and the salesman can make greater contributions to the prosperity of animal agriculture by traveling as "partners."

In discussing feed additives, Dr. Hightower stated, "I would like to see these various type additive feeds be reclassified and designated as prescription feeds whose control shall be under the Department of Agriculture and the direct supervision of the state veterinarian, making it necessary that permits for the use of these type feeds be issued from the office of the state veterinarian or a graduate veterinarian acting as agent of the state office. In the case of the poultry industry where the feeding of medicated feeds is necessary to control disease, a standing permit for a specified number of days could be issued to the farmer. In such event, he would buy such medicated feeds as would be necessary to carry the birds into the post-vaccinated period."

He continued by stating that the do-it-yourself trend has resulted already in some areas in injury to the practices of veterinarians working mainly with large animals and costly waste to farmers. He pointed out the

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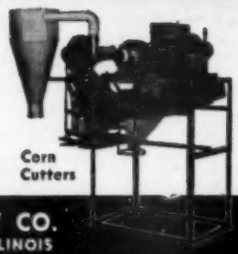
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promiscuously administered use of penicillin by some farmers.

Dr. Hightower concluded by calling attention to the work being done by veterinarians for the treatment and control of various diseases.

Diagnostic Laboratories

Dr. T. F. Zweigart, head of the diagnostic laboratory, Raleigh, discussed the work being done by his organization.

"You, as feed service men," he said, "have good reason to be interested in the health of the herds and flocks eating your feed. In addition to the fact that diseased herds consume less feed than normal and utilize it less efficiently, your feed may be unjustly blamed for the poor herd or flock performance."

He urged cooperation between the feed men and the veterinarians. He pointed out that the diagnostic laboratory assists the veterinarian. For help from the laboratory, the farmer should choose an animal which is typical of herd condition, and, if possible, untreated, he stated.

In conclusion, Dr. Zweigart added, "Our mutual interest in helping the livestock farmer reduce disease losses gives the feed man, practicing veterinarian and laboratory personnel much in common."

T. C. Bialock, extension dairyman, concluded the program with his talk on "Extension's Responsibility in the Total Health Program."

"Our total program," he stated, "emphasizes animal health, and our approach is directed at prevention rather than treatment. We attempt to teach the importance of good sanitation, feeding and management in disease control."

He pointed out extension's desire to keep the field servicemen informed as new developments occur. The conference is one way of accomplishing this goal, he stated.

GIRL WINS AWARD FOR CHICK SEX RESEARCH

NAMPA, IDAHO — A 16-year-old Boise High School junior won best-of-show awards here for her exhibit outlining her research in which she said she changed the sex of chickens.

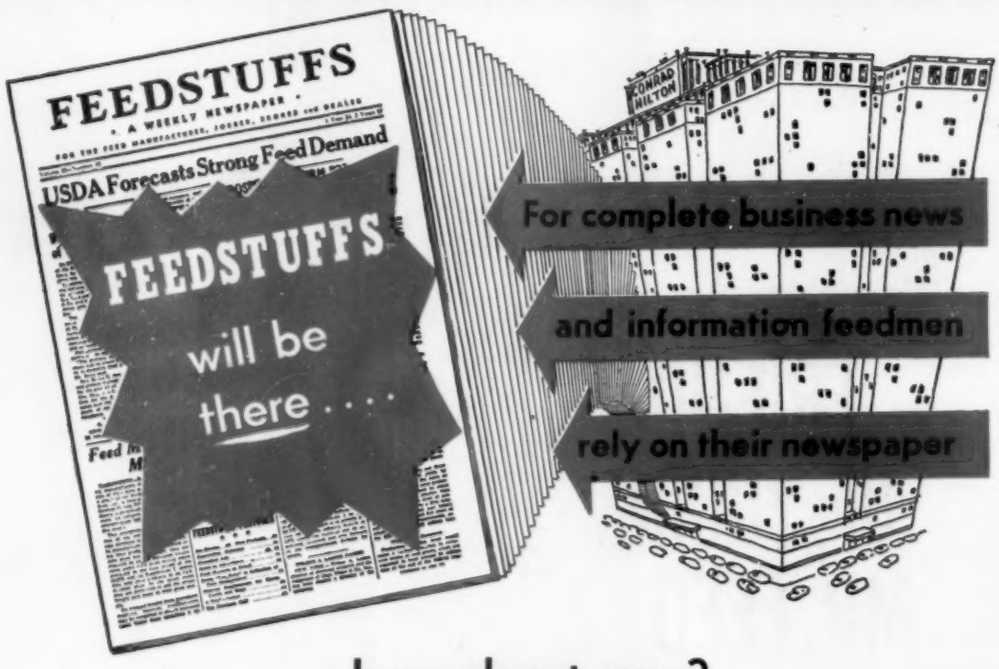
Beth Burt captured the honors with an experiment in which she said she obtained a larger percentage of female chicks by injecting three-day old eggs with female sex hormones.

She said 82% of the chicks hatched from one batch of eggs injected developed into females. Of the remaining chicks, most were abnormal with many having both male and female organs, she stated.

Miss Burt said her attempts to cause females to develop into males by injection of male hormones had not proved successful.

Part of Miss Burt's honors will include a trip to a national science fair in Kansas City, Mo.

AFMA Convention and National Feed Show



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170 Reserve Exhibit Space for APHF Event

KANSAS CITY—A total of 170 commercial concerns have reserved exhibit space for the 1961 American Poultry Congress & Exposition scheduled for July 18-20 in Minneapolis.

The initial offering of space got underway March 13. Following a schedule established earlier, prospective exhibitors called the American Poultry Congress & Exposition at 20-minute intervals for a period of two weeks to complete space allocations.

Virtually all of the available 85,000 sq. ft. of floor area was reserved, according to Ed Gray, exhibit manager, American Poultry & Hatchery Federation here.

Mr. Gray said that three large exhibit areas will be utilized this year. They are the arena, lower level exhibit hall and west hall section of Minneapolis' big civic auditorium.

Somewhat more area will be required to handle the 1961 displays than in 1956, 1950 or 1929, the three previous occasions the poultry congress has been held in Minneapolis.

A crowd of 5,400 registered for the event in 1956.

Accommodations of all downtown Minneapolis hotels will be required to provide housing for the convention.

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U.S. Farm Animal Population by States

Note: Number of livestock and poultry on farms and ranches (livestock and poultry not on farms are excluded), Jan. 1, 1960 and 1961 (000's omitted). Source: USDA

State and division	ALL SHEEP AND LAMBS		CHICKENS								TURKEYS**											
			—Total—		—Hens—		—Pullets—		—Other chickens*		ALL TURKEYS —Heavy—		—Light—		—Total—		BREEDER HENS —Heavy—		—Light—		—Total—	
	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961
Maine	36	36	4,660	4,680	822	962	3,588	3,480	250	238	5	3	...	...	5	3	2	1	...	...	2	1
New Hampshire	8	8	2,079	2,029	322	354	1,647	1,581	110	94	23	23	...	...	23	23	16	16	...	...	16	16
Vermont	12	11	848	812	242	235	586	545	40	32	6	5	...	...	6	5	3	2	...	...	3	2
Massachusetts	12	12	3,674	3,485	931	931	2,600	2,418	143	136	57	62	...	...	57	62	22	25	...	...	22	25
Rhode Island	2	2	443	423	117	116	313	294	13	14	3	3	...	...	3	3	1	1	...	...	1	1
Connecticut	7	7	3,693	3,463	1,113	1,046	2,441	2,295	139	122	35	34	1	1	36	35	21	21	1	1	22	22
New York	173	160	10,557	10,128	4,089	4,007	6,149	5,780	319	341	38	42	1	...	39	42	28	30	...	...	28	30
New Jersey	16	17	12,596	11,492	4,967	4,967	7,228	6,144	401	381	12	12	1	2	13	14	7	7	...	1	7	8
Pennsylvania	250	240	21,178	20,063	6,535	6,862	13,562	12,206	1,081	995	128	122	16	16	144	138	37	38	3	4	40	42
North Atlantic	516	493	59,748	56,575	19,138	19,479	38,114	34,743	2,496	2,353	307	306	19	19	326	325	137	141	4	6	141	147
Ohio	1,163	1,071	13,320	13,115	4,713	5,043	8,377	7,791	230	281	145	189	66	57	211	246	99	132	48	44	147	176
Indiana	515	522	13,990	13,419	4,116	4,116	9,251	8,950	353	353	43	69	6	7	49	76	24	36	3	4	27	40
Illinois	722	717	13,379	12,426	4,695	4,930	8,484	7,296	200	200	61	63	5	5	66	68	32	31	3	3	35	34
Michigan	407	388	8,443	7,346	3,176	3,208	4,996	3,897	271	241	77	95	5	4	82	99	64	83	3	3	67	86
Wisconsin	266	271	10,904	10,645	4,119	4,284	6,447	6,060	338	301	214	280	6	6	220	286	84	104	2	2	86	106
East North Central	3,073	2,969	60,036	56,951	20,819	21,581	37,825	33,994	1,392	1,376	540	696	88	79	628	775	303	386	59	56	362	442
Minnesota	999	1,051	19,905	18,825	5,832	6,415	13,861	12,198	212	212	475	645	100	100	575	745	360	495	85	85	445	580
Iowa	1,663	1,640	25,841	23,707	6,470	7,052	19,047	16,380	324	275	275	314	34	49	309	363	177	201	20	30	197	231
Missouri	803	742	11,417	10,671	3,859	3,473	7,206	6,846	352	352	182	230	18	20	200	250	124	172	15	18	141	190
North Dakota	692	732	2,838	2,652	971	952	1,784	1,588	83	112	39	47	1	1	40	48	28	43	...	...	28	43
South Dakota	1,756	1,795	8,713	8,283	2,606	2,814	5,928	5,276	179	193	28	27	1	2	29	29	17	18	1	1	18	19
Nebraska	836	795	10,425	10,109	3,055	3,299	7,071	6,505	299	305	51	63	1	1	52	64	27	35	1	1	28	36
Kansas	756	799	7,957	7,204	2,882	2,738	4,782	4,208	293	258	49	90	4	2	53	92	35	62	1	2	36	64
West North Central	7,505	7,554	87,096	81,451	25,675	26,743	59,679	53,001	1,742	1,707	1,099	1,416	159	175	1,258	1,591	770	1,026	123	137	893	1,163
Delaware	5	5	801	846	244	251	519	555	38	40	5	7	...	1	5	8	1	2	...	...	1	2
Maryland	38	35	2,177	1,848	690	697	1,416	1,090	71	61	13	15	1	1	14	16	8	9	...	...	8	9
Virginia	326	306	7,023	6,758	2,291	2,406	4,389	3,878	423	474	68	103	130	132	198	235	54	90	99	116	153	206
West Virginia	283	272	2,360	2,218	1,004	1,004	1,275	1,135	81	79	12	12	40	42	52	54	6	6	21	21	27	27
North Carolina	55	54	13,902	14,072	4,957	5,155	7,712	7,635	1,233	1,282	116	157	...	...	116	157	65	98	...	...	65	98
South Carolina	11	11	4,947	5,253	1,891	2,061	2,765	2,959	291	233	66	68	2	2	68	70	37	43	1	1	38	44
Georgia	27	21	12,901	13,720	4,227	4,396	8,234	8,893	440	431	37	37	6	10	43	47	22	21	1	3	23	24
Florida	8	8	5,879	6,545	2,434	2,823	2,945	3,122	500	600	22	15	12	13	34	28	12	9	9	11	21	20
South Atlantic	753	712	49,990	51,260	17,738	18,793	29,175	29,267	3,077	3,200	339	414	191	201	530	615	205	278	131	152	336	430
Kentucky	566	492	6,891	6,086	2,629	2,708	3,815	2,976	477	402	60	87	...	...	60	87	48	68	...	...	48	68
Tennessee	245	211	7,213	6,529	3,181	3,054	3,553	3,020	479	455	23	27	...	...	23	27	15	14	...	...	15	14
Alabama	36	31	8,425	8,460	3,470	3,505	4,492	4,492	463	463	25	74	6	6	31	80	18	22	3	3	21	25
Mississippi	74	62	8,119	8,168	3,296	3,939	4,288	3,816	435	413	43	41	4	2	47	43	19	19	3	2	22	21
Arkansas	48	50	6,027	5,844	2,441	2,417	3,305	3,140	281	287	86	118	17	12	103	130	47	70	7	5	54	75
Louisiana	93	102	3,922	3,906	1,520	1,589	1,963	1,797	441	520	20	19	...	...	20	19	14	14	...	...	14	14
Oklahoma	274	308	4,332	3,528	1,736	1,936	2,084	1,502	108	90	82	94	5	8	87	102	53	56	4	6	57	62
Texas	5,938	6,159	17,088	15,500	8,056	7,412	8,316	7,484	636	604	335	373	56	42	391	415	211	269	42	35	253	304
South Central	7,274	7,415	61,927	58,021	26,829	26,560	31,808	28,227	3,290	3,234	674	833	88	70	762	903	425	532	59	51	484	583
Montana	1,872	1,758	1,235	1,170	407	407	787	724	41	39	3	3	...	...	3	3	2	2	...	...	2	2
Idaho	1,153	1,150	1,469	1,436	457	466	960	912	52	58	8	9	3	1	11	10	6	7	3	1	9	8
Wyoming	2,360	2,299	365	335	171	152	183	172	11	11	5	3	...	2	5	5	2	2	...	...	2	2
Colorado	1,989	1,974	1,715	1,468	784	760	891	677	40	31	28	40	2	2	30	42	10	14	1	1	11	15
New Mexico	1,185	1,181	836	882	403	399	408	461	25	22	9	12	...	...	9	12	7	8	...	...	7	8
Arizona	488	496	1,013	993	396	392	544	522	73	79	15	13	...	...	15	13	9	7	...	...	9	7
Utah	1,336	1,275	1,760	1,727	685	671	1,006	986	69	70	118	117	...	4	118	121	46	54	...	3	46	57
Nevada	347	331	90	87	36	34	49	47	5	6	...	...	...	...	...	...	...	...	...	...	...	...
Washington	330	339	5,588	5,693	1,898	2,031	3,455	3,420	235	242	56	52	...	...	56	52	30	26	...	...	30	26
Oregon	916	942	3,360	3,293	1,288	1,365	1,940	1,804	132	124	238	236	29	38	267	274	147	208	23	23	170	231
California	2,073	2,052	33,256	36,568	10,023	11,627	18,195	19,651	5,038	5,290	1,587	2,084	28	15	1,615	2,099	805	1,096	20	12	825	1,108
Western	14,049	13,789	50,687	53,652	16,548	18,304	28,418	29,376	5,721	5,972	2,067	2,569	62	62	2,129	2,631	1,084	1,424	47	40	1,111	1,464
U. S.	33,170	32,932	369,484	357,910	126,747	131,460	225,019	208,608	17,718	17,842	5,026	6,234	607	606	5,633	6,840	2,904	3,787	423	442	3,327	4,229

*Does not include commercial broilers. **Does not include turkey fryers.

State and division	CATTLE AND CALVES																HOGS AND PIGS							
	All cattle and calves		KEPT FOR MILK —Cows 2 yrs. and older—		—Heifers— 1 to 2 yrs.		—Heifer— calves		OTHER —Cows 2 yrs. and older—		Heifers 1 to 2 yrs.		—Calves—		Steers 1 yr. and older		Bulls 1 yr. and older		—Total—		Under six months		—Six months and over— —Sows— and gilts		—Others—	
	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961	1960	1961
Maine	194	200	105	106	31	31	32	34	8	9	3	4	7	8	4	4	4	4	22	21	14	13	3	3	5	5
N. H.	98	99	58	58	15	16	17	17	2	2	1	1	2	2	1	1	2	2	13	13	8	8	2	2	3	3
Vermont	427	431	285	288	59	59	65	67	3	3	2	2	4	4	2	2	7	6	11	11	7	7	2	2	2	2
Mass.	151	153	101	102	19	19	20	21	3	3	2	2	2	2	2	2	2	2	135	117	66	59	13	13	56	45
R. I.	21	20	16	15	2	2	2	2	...	...	...	...	...	...	...	...	1	1	10	10	6	6	1	1	3	3
Conn.	150	153	97	99	21	21	21	22	3	3	1	1	2	2	2	2	3	3	21	19	11	11	2	2	8	6
N. Y.	2,131	2,152	1,366	1,393	307	308	311	313	43	40	15	14	30	27	29	29	30	28	133	110	90	77	20	16	23	17
N. J.	200	198	140	139	22	22	24	23	4	4	2	2	3	3	3	3	2	2	122	100	88	83	14	14	20	63
Pa.	1,913	1,951	978	988	242	252	278	283	90	94	35	33	61	60	195	208	34	33	558	525	383	368	68	65	107	92
N. Atl.	5,285	5,357	3,146	3,188	718	730	770	782	156	158	61	59	111	108	238	251	85	81	1,075	986	673	632	125	118	277	236
Ohio	2,250	2,272	765	757	191	191	201	209	260	268	115	111	376	387	313	321	29	28	2,707	2,653	2,101	2,123	353	359	253	171
Ind.	2,062	2,103	478	473	127	122	138	127	347	350	149	143	495	500	308	367	20	21	4,949	4,801	3,723	3,750	590	620	636	431
Ill.	3,981	3,901	648	616	190	177	222	211	668	681	298	263	900	916	1,008	991	47	46	7,469	7,096	5,120	5,005	975	975	1,374	1,116
Mich.	1,701	1,701	715	694	211	206	228	228	109	113	66	68	179	187	173	186	20	20	797	725	606	545	93	91	98	89
Wis.	4,253	4,296	2,402	2,426	645	651	676	696	123	123	90	88	123	122	144	143	50	47	1,963	1,767	1,347	1,240	305	314	311	213
E. N. C.	14,247	14,273	5,008	4,966	1,364	1,346	1,465	1,471	1,507	1,535	718	673	2,073	2,112	1,946	2,008	166	162	17,805	17,042	12,897	12,683	2,316	2,359	2,672	2,000
Minn.	3,975	4,054	1,407	1,407	418	418	437	454	335	352	195	195	656	663	479	517	48	48	3,594	3,378	2,316	2,360	530	576	748	442
Iowa	6,660	6,460	943	934	255	245	261	245	993	1,008	585	540	2,050	1,909	1,500	1,505	73	74	12,951	12,433	7,486	7,560	1,668	1,778	3,797	3,095
Mo.	3,980	4,099	723	709	187	174	202	212	1,135	1,169	270	273	918	939	470	545	75	78	4,232	3,893	3,043	2,891	483	517	706	485
N. D.	1,758	1,916	305	287	65	64	74	74	648	680	107	122	441	538	79	111	39	40	288	248	106	107	63	68	119	73
S. D.	3,262	3,327	281	273	55	56	83	84	1,250	1,288	261	263	973	993	287	298	72	72	1,328	1,262	573	670	235	265	520	327
Neb.	5,072	5,175	356	347	91	85	98	96	1,499	1,519	529	531	1,525	1,556	901	965	73	76	2,502	2,427	1,457	1,534	341	399	704	494
Kansas	4,429	4,473	390	370	101	99	112	117	1,195	1,245	410	398	1,483	1,535	676	647	62	62	1,177	1,142	807	841	142	166	228	135
W. N. C.	29,136	29,504	4,405	4,327	1,172	1,141	1,267	1,282	7,055	7,261	2,357	2,322	8,046	8,133	4,392	4,588	442	450	26,072	24,783	15,788	15,963	3,462	3,769	6,822	5,051
N. Cent.	43,383	43,777	9,413	9,293	2,536	2,487	2,732	2,753	8,562	8,796	3,075	2,995	10,119	10,245	6,338	6,596	608	612	43,957	41,825	28,685	28,646	5,778	6,128	9,494	7,051
Del.	56	53	30	29	7	7	7	7	5	4	1	1	2	1	3	3	1	1	35	35	24	26	4	4	7	5
Md.	493	508	230	232	56	57	58	62	49	49	18	20	34	36	39	43	9	9	186	182	128	136	22	22	36	24
Va.	1,394	1,408	382	382	96	98	106	110	371	384	82	85	232	221	103	106	22	22	689	668	497	484	78	77	114	107
W. Va.	540	540	148	141	30	31	34	35	152	161	36	35	85	85	45	42	10	10	109	95	77	64	14	13	18	18
N. C.	907	898	305	299	88	87	95	94	202	200	55	56	98	98	46	44	18	18	1,520	1,292	990	842	198	176	332	274
S. C.	1,237	1,222	280	280	30	31	35	35	177	177	40	41	91	92	34	28	18	18	594	563	384	294	68	65	142	104
Georgia	1,424	1,438	240	233	62	61	68	71	508	508	129	129	280	286	103	114	34	36	1,780	1,566	1,190	1,075	227	207	383	284
Florida	1,629	1,596	213	213	59	61	68	70	741	699	106	105	212	216	184	186	46	46	401	393	255	260	45	47	101	86
S. Atl.	6,980	6,983	1,670	1,649	428	433	471	484	2,205	2,182	467	472	1,034	1,035	547	568	158	160	5,314	4,694	3,545	3,181	636	611	1,133	902
Ky.	2,053	2,115	561	555	139	138	146	146	515	556	144	154	318	333	197	199	33	34	1,474	1,400	1,076	1,023	179	179	219	188
Tenn.	1,858	1,914	532	521	117	122	133	138	492	526	128	135	321	338	93	100	32	34	1,453	1,337	1,026	970	182	180	245	187
Ala.	1,656	1,656	270	262	78	76	84	84	669	669	105	109	330	334	91	93	29	29	1,144	972	759	635	127	117	258	220
Miss.	2,107	2,107	425	404	113	113	130	127	808	810	142	152	356	370	95	93	38	38	775	636	435	383	75	70	365	183
Ark.	1,374	1,388	241	229	59	58	65	64	554	574	98	101	268	271	59	61	30	30	478	416	315	283	55	48	108	85
La.	1,765	1,818	277	274	66	69	77	79	804	834	166	166	284	302	57	59	34	35	340	279	190	153	34	30	116	96
Okla.	3,378	3,513	289	275	79	75	93	89	1,390	1,490	265	273	882	948	320	300	60	63	475	380	350	277	50	48	75	55
Texas	9,106	9,379	649	610	165	160	190	186	4,206	4,374	758	788	2,375	2,475	537	553	226	233	1,115	1,037	755	732	125	128	235	177
S. Cent.	29,297	29,890	3,244	3,130	816	811	918	913	9,438	9,833	1,806	1,878	5,144	5,371	1,449	1,458	482	496	7,254	6,457	4,906	4,446	827	800	1,521	1,191
Mont.	2,245	2,133	87	82	18	18	27	25	1,114	1,116	202	196	649	564	101	85	47	47	151	151	93	102	17	20	41	29
Idaho	1,415	1,401	228	221	78	78	91	93	385	385	105	102	338	332	166	166	24	24	150	147	110	112	16	17	24	18
Wyo.	1,175	1,116	35	33	8	8	10	9	550	556	102	102	363	315	82	68	25	25	35	29	20	17	4	3	11	9
Colo.	2,267	2,240	139	135	41	41	50	50	761	784	327	343	592	558	310	279	47	50	219	193	146	135	23	25	50	33
N. Mex.	1,198	1,174	46	45	10	11	13	12	625	631	109	112	313	282	58	56	24	25	56	54	36	37	7	7	13	10
Ariz.	1,019	1,014	53	53	14	14	16	17	343	321	86	102	257	233	231	254	19	20	32	29	19	17	3	3	10	9
Utah	719	726	108	107	31	31	35	35	252	262	65	67	154	150	65	65	9	9	68	66	47	49	8	8	13	9
Nev.	549	516	17	18	7	7	8	8	264	265	64	59	144	117	33	30	12	12	10	10	6	6	2	2	2	2
Wash.	1,162	1,174	261	261	72	75	85	87	283	289	82	85	254	242	103	113	22	22	144	140	112	113	15	17	17	10
Oregon	1,421	1,435	181	177	52	50	64	67	553	555	127	132	323	320	88	100	33	34	184	184	142	145	18	21	24	18
Calif.	4,121	4,203	899	899	250	240	285	276	853	851	358	314	630	684	765	859	81	80	377	340	207	195	52	50	118	95
Western	17,291	17,132	2,054	2,031	581	573	684	679	5,983	6,015	1,627	1,614	4,017	3,797	2,002	2,075	343	348	1,426	1,343	938	928	165	173	323	242
U. S.	96,236	97,139	19,527	19,291	5,079	5,034	5,575	5,611	26,344	26,984	7,036	7,018	20,425	20,556	10,574	10,948	1,676	1,697	59,026	55,305	38,747	37,853	7,531	7,830	12,748	9,622

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UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Corn Acreage in 1961

A guessing game of major importance to feed manufacturers is going on right now. It deals with how many acres will be planted to corn this year. Of course, until the count is taken later in the year, the figure will be uncertain.

The key question, of course, is the impact the new feed grain program will have on acreage of corn and other crops. This past winter runup of soybean prices also will have an impact on planting.

The U.S. Department of Agriculture recently asked farmers how much corn they expected to plant this year. This question was asked on March 1. Since then feed grain legislation was passed into law by Congress and this could lead to considerable shifting of early intentions.

Even so, it will be helpful to review past estimates of planting intentions made in March with acreages planted—reported after the harvest season. Keep in mind, of course, these are early estimates.

EXHIBIT 1. Corn, Estimates of Planted Acreages, U.S., 1934-61 (in thousands)

Year	Planting intentions March report	Estimated acreage planted December report
1934	92,073	95,319
1935	95,692	98,009
1936	98,775	100,220
1937	94,840	96,483
1938	94,595	93,257
1939	92,062	91,501
1940	87,770	88,143
1941	87,656	87,164
1942	91,348	91,011
1943	96,827	97,136
1944	99,583	98,722
1945	95,778	92,867
1946	92,993	90,027
1947	87,599	86,168
1948	86,131	86,196
1949	84,809	87,910
1950	82,765	84,370
1951	85,694	83,866
1952	83,928	82,658
1953	81,764	81,403
1954	81,037	81,893
1955	82,833	81,577
1956	78,686	78,557
1957	74,410	73,985
1958	75,143	74,654
1959	83,921	85,530
1960	85,758	82,906
1961	82,405	....

Report of Intentions

This is written to acquaint you with the report of intentions to plant corn. We are going to picture for you how closely farmers followed their early season planting intentions.

You need to have a good idea how often and how much plans were changed later in the season. Not that the past history will be repeated, but it will help you gauge the confidence you can place on the estimates.

Exhibit 1 is a table showing for several years the March prospective planting of corn and the estimate made the following December of acres actually planted. From these data you can have the actual acreage reports for direct comparison. These data were compiled from official reports released by the Crop Reporting Board.

Exhibit 2 has been prepared to give you a better picture of how closely prospective plantings were realized. In general, intentions were followed fairly closely. However, during some years substantial changes were made.

How to Read Exhibit

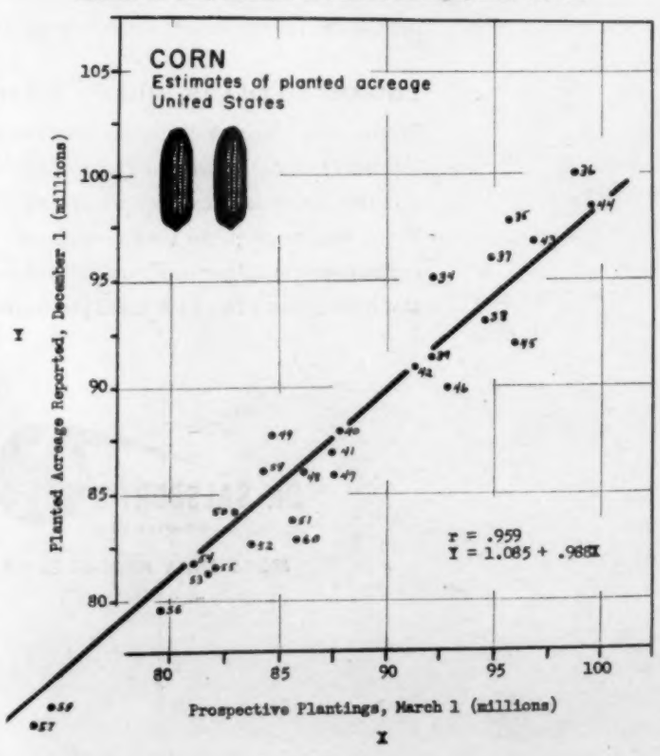
Here is how to read Exhibit 2. The March prospective plantings for each year are found on the bottom scale. Then you read up until even with the actual plantings measured on the left hand scale. At this point you place a dot and write the year beside it. This is done for each year.

After the data are all located, a line is drawn that represents the general relationship. This is almost an average but not quite. A least-squares regression technique was used to find this diagonal line.

If each year fits this usual pattern, all the dots would fall on the solid line. As you can see, they don't. When the dot is above the line, actual plantings exceeded March intentions to seed and vice versa.

You can review the past record

EXHIBIT 2. Corn, Estimates of Planted Acreages, U.S., 1934-60



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by reference to the two accompanying exhibits. You will agree, I'm sure, that the past record has been a good one. Of course, many things can happen to change the picture after the estimate is made, and you are in a better position to use the estimates if you have an idea how much the picture has changed in the past.

Change Location for N.W. Production School

SEATTLE, WASH. — The Benjamin Franklin Hotel in Seattle will be the site of the 1962 Pacific Northwest Feed Mill Production School and the Washington State Feed Assn. convention.

It had been announced earlier that the events would be held in the Chinook Hotel at Yakima, Wash.

Dates for the school are Feb. 14-15, and the convention will follow Feb. 16.

Confinement Raising Of Pullets Lowers Costs, Test Shows

AMES, IOWA — It is cheaper to raise pullets in confinement than to let them range outdoors, records of the 1960 Iowa Demonstration Flock show.

According to Donald L. Miller, extension poultryman at Iowa State University here, the average cost of a confinement reared bird was $1.29 compared with $1.39 for a range reared bird.

The flock sizes varied from 303 to 5,100 started chicks. The records were completed when the birds were five months old, he said.

Feed consumption was about equal for the two methods, according to the test records. However, chick and feed costs make up about 87% of the total cost of rearing birds, Mr. Miller pointed out. So, it is necessary for the poultryman to buy good quality chicks with bred-in capacity to use feed efficiently if he intends to keep his total costs low, the extension poultryman commented.

Range reared birds required about 28% more labor than the confined birds. This was due mainly to distance traveled to the range, transportation and distribution of feed and water and the fact that the chickens were placed in scattered units. When birds are confined, the operator usually utilizes feed storage bins, pipes the water supply to the poultry house, does not need moving equipment, and concentrates on large units of chickens in one area, Mr. Miller stated.

Death loss was 39% less among confinement reared birds than among range-reared birds. Mr. Miller said a large portion of this difference can be attributed to losses due to predators in range rearing. Confinement rearing gives protection against rats, coons, foxes, skunks and other predatory animals.

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Meeting the challenge of the '60's with service

Dealership Manager Robert M. Barton, of Murray County Farm Service, Chatsworth, Georgia, discusses premium quality egg production with his Purina "Sales Partner," Salesman Otis O. McIntosh. Clifford Williams, Jr., is gathering the eggs.

THE PURINA "ARCHWAY" PROGRAM

Creative selling helps farmers and makes jobs in community

Prosperity and a higher living standard have resulted in many communities through creative selling by Purina Dealers and their "Sales Partners," the Purina Salesmen.

This creative selling sometimes brings the introduction of Purina "Pig Parlors" . . . puts caged hens into an area . . . adds new efficiency to production of milk, meat and eggs.

Whatever course creative selling takes, it usually means more income to farmers, more jobs in town, more tonnage for Purina Dealers.

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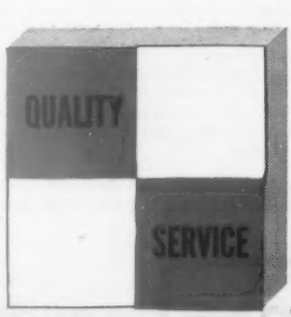
OTIS O. McINTOSH proves, with action, the benefits of creative selling. One market egg operation has brought $100,751.22 gross income in a year and a half and it is still growing. It has created much-needed work for folks in the community. Salesman McIntosh has set up a similar project in another market and has influenced the erection of eight Purina "Pig Parlors."



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Sings Praises of Pork

In singing the praises of lean pork, there's one "soloist" who would like his "song" to be sung by a "mighty choir." He is George W. Stark, chairmen of the board of directors, American Meat Institute.

Mr. Stark would like hog feeders throughout the country to learn of the advantages of pork and join him in passing the information along to the public.

In a recent speech, Mr. Stark said that housewives who believe that pork adds to their overweight problems are indulging in an old wives' tale. "Actually, cooked lean pork is not only low in calories, but also is an excellent source of complete protein, B vitamins and food iron," Mr. Stark's "song" goes.

"During the last 10 years, progressive hog raisers have improved many of their practices in development of meat-type hogs, which produce the quality of pork preferred by most consumers," said Mr. Stark. Now one-third of all hogs marketed qualify as meat-type hogs, he added. He predicted that in the future many other progressive farmers will shift to producing this type of animal.

"We who are in the meat packing and processing business are delighted with this development, for it means we can supply the leaner cuts of pork which consumers prefer," Mr. Stark said. "And producers of this type of hog are also pleased because these animals rank high in the rate of gain and feed conversion, which means they are practical animals to raise."

◆

Roosters Need Help

Breeding cockerels need special feeding to maintain proper health and condition, Ted R. Hash, extension poultryman at West Virginia University, advises.

He says that cockerels respect their "lady friends" and will not crowd into feed hoppers at their expense.

A good method to provide special feeding for males in the poultry flock is cockerel feeders fastened on the wall or suspended high enough to keep pullets from eating out of them. With some of the large size birds of today, these hoppers may have to be about 22 in. high, Mr. Hash says. Observation by the manager will help determine the proper height.

At least one cockerel feeder should be provided for each 10 to 12 males, the extension specialist recommended. These feeders should be well distributed throughout the poultry house to provide an opportunity for timid birds to eat. One or two feeders should be placed over the roosting area.

The cockerel hoppers should be kept filled with breeder pellets and scratch grains. "Be sure to observe whether the males eat freely from the hoppers," Mr. Hash said. "If their combs bump the reel or grill of the hoppers, they may not eat from the feeder.

"Maintaining a well-fed group of males in a hatching flock is essential," Mr. Hash emphasized. "Providing ample feeding space for their use is important. Who said chivalry is dead?"

◆

Swather for Hay

Harvesting hay with a self-propelled swather has many advantages over mowing and raking, Robert A. Kepner, professor of agricultural engineering, told the recent 30th annual Farm Machinery Conference on the Davis campus of the University of California.

Mr. Kepner reported that tests at Davis showed an 8% reduction in yield of swathed hay in the first cutting in which the swather was used, but that there was no difference between mowed and swathed yields in the next cutting.

"The reduced yield in the first cutting was the result of longer stubble left by the swather next to irrigation levees," said Mr. Kepner. "However, the swather checks recovered more rapidly because less of the short, new growth was cut."

The Davis engineer added that adverse mowing or raking conditions undoubtedly would increase mowed hay losses in relation to swather losses.

"Calculated total costs per acre for swathing and conditioning plus raking into double windrows are $2.50 at 600 acres per year, $1.50 at 1,500 acres and $1.10 at 4,000 acres," Mr. Kepner said.

This analysis shows, he continued, that this system is more costly than mowing and raking for less than

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about 900 acres per year, but at 1,500 acres or more it is 15¢ per acre cheaper than mowing and raking and 60¢ less than mowing-conditioning and raking.

The Davis engineer also pointed out that swathing and raking require only 60% as much labor as mowing and raking without conditioning.

Mr. Kepner noted that swathed hay tends to have slightly higher protein content than mowed hay, while there is no consistent difference in crude fiber contents from the treatments.

◆

Cows Short Changed

Evidence indicates that high producing cows require more concentrates. than they have time to consume in many milking parlors where rapid milking practices are employed, according to Michigan researchers.

To avoid short changing those high producers on their needed grain intake, several steps were advised to increase grain consumption. Or, it was suggested that feeding grain or a substitute like citrus pulp or beet pulp in the feed area might help.

The study indicated that cows consume concentrates at the rate of one-half to three-fourths pound per minute in milking parlors and somewhat slower in stanchion barns. It was also indicated that cows on pasture eat concentrates slower than when fed dry feed. Pelleting of the concentrate rations increased the eating rate approximately one-tenth to two-tenths pound per minute, it was reported.

The addition of 1.5 parts water per pound of concentrate increased the eating rate in milking parlors 70% in one experiment and 30% in another, research showed.

◆

Beef Improvement

The more intense selection of sires permitted by the use of artificial insemination could result in a rate of genetic improvement in beef cattle of one and one-half to three times that possible with natural service.

Dr. G. Eric Bradford, assistant professor of animal husbandry on the Davis campus of the University of California, made this statement at the 1961 Animal Husbandry Livestock Day there.

Using weaning weight to illustrate the relative genetic change possible with different intensities of selection, Dr. Bradford said:

"The use of artificial insemination exclusively could increase weaning weight between 4.0 and 4.5 lb. per year, compared to an estimated improvement of 1.4 to 2.0 lb. per year when only natural service is used."

Dr. Bradford declared that the same relative increase from the use of artificial insemination would occur in the selection of other traits or combinations of traits. "For things such as loin eye area or tenderness, which must be measured on the progeny of a bull," he said, "the relative advantage of artificial insemination over natural service is increased."

Another important advantage to the cattleman from artificial insemination is the increased uniformity of calves resulting from the use of only one or a few sires in a particular year, Dr. Bradford pointed out.

◆

Lights for Layers

By early spring well grown fall hatched pullets are producing market eggs, and under good laying house management will produce as many eggs in a 12 month period as spring hatched birds, Penn State researchers say.

Fall hatched pullets grow during a period of decreasing daylight until Dec. 21. Then daylight increases to the maximum in June. This increasing daylight stimulates fall hatched pullets to production, often before they attain normal body size.

F. H. Leuschner, Pennsylvania State University, says poultrymen can overcome these problems by using artificial lights to provide a 12 to 14 hour light day from 6 to 12 weeks of age on.

Early lighting reduces the stimulating effect as maturity approaches, he said. Thus fall hatched pullets can be as large as those spring hatched when they start to lay. They will lay just as large eggs and reach full egg size as soon.

Fall hatched pullets help keep laying houses filled more nearly to capacity. That means a greater return per man-hour of labor and higher average annual production on a hen-day basis. It also makes better use of equipment and available labor.

FEED STORE SOLD

SWEET HOME, ORE.—Mel Horst, Mel's Feed Store here, has announced the sale of his operation to Dan Ashton and Stan Ego, owners of Santiam Feed & Garden Supply. Mr. Ashton will manage the store under the same name and in the same location. He said that the operation will continue to carry the same lines.

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JOE BROOKS

BY AL P. NELSON

The Feeder Wants Credit

The burly overalled farmer, who came in to see Joe Brooks shortly after lunch, walked with a slight swagger, and his battered grey felt hat was cocked slightly to one side of his head.

"Joe Brooks?" he asked confidently.

"Yes, I'm he," Joe replied from behind his desk as he smiled at the farmer.

"I'm Jim Bentham," said the farmer. "I've rented the old Hurley place on Route 4. Figuring on going into hog raisin' pretty heavy. Was in it in Indiana for three years, and did pretty well. Got relatives up this way and the wife wanted to move closer to 'em. You know how it is."

Joe smiled. "Sure do. Glad to know you, Mr. Bentham. Have a chair."

The burly farmer sat down, crossed a heavy leg over the other and scratched a two-day growth of black whiskers. "I'm gonna be needin' feed, Mr. Brooks," he said. "Quite a bit of it. Got some sows farrowin' soon, and then I figure to buy a bunch of feeder pigs and raise 'em out. Might get up to 300 pigs this spring and summer, all told."

"Fine," Joe said. "We'd be glad to sell you some feed. We can work on any formula you have, or we can grind and mix on our own formula if you wish. And we can put the feed right where you want it—into feeders or into auger wagons or storage."

"That's the kind of service I want," said Mr. Bentham with a chuckle. "You gotta grain bank, too, I hear?"

Joe nodded. "Figuring on raising a lot of corn "

"I sure do," said Mr. Bentham. "By fall I'll have a lot of good corn, Mr. Brooks, to toss into that grain bank. That's when I'll really be goin' strong on this new place."

Joe nodded. He always liked to get new customers. "Until you get your crop," he said, "you can buy grain from us to mix with your feeds, or you can buy our complete feeds."

"The first nine months are gonna be a little rough on me," Mr. Bentham said. "You know, movin' to a new place, you always have a lot of extra expenses. And you don't have any corn to carry over from the year before, and things like that. So I'm gonna need a little help on carryin' me on feed for awhile. I can charge some here, can't I?"

30 Days Credit

Joe nodded. "Well, we will go along with you for 30 days," he said. "All our accounts are payable at that time. That's the way it's been with us for quite a few years. We need our money to operate."

Mr. Bentham frowned a little. "Hell, that makes it rough on a new farmer movin' into the area. It isn't his fault that so many expenses pile up all at once. Down where I come from, feed men string along with a good farmer—somebody that pays his bills. They give 60-90 days or more credit where it is merited. I thought maybe I could get that sort of cooperation from you. I've heard so much about you being a top notch feed man."

Joe shifted in his swivel chair. "We'll go as far as we can," he said easily. "And that's 30 days here. Gosh, we have so many customers that if we extended more credit to many of them we'd have to borrow huge sums from the bank to carry us along. We just can't do that for customers, much as we would like to. But there is a way out for a situation just like this."

"What's that?" asked the farmer a little coolly.

Bank Loan

"We've got a mighty cooperative banker at the First National," Joe said. "His name is Pete Hayward. He was a farmer himself years ago. Knows farm financing. He's more cooperative in feed loans than anyone I know in the county. You go see him, show him your credits, and if he can make you a loan on feed, he will. Want me to call him now and tell him you'll be in?"

"No," said Mr. Bentham. "I guess

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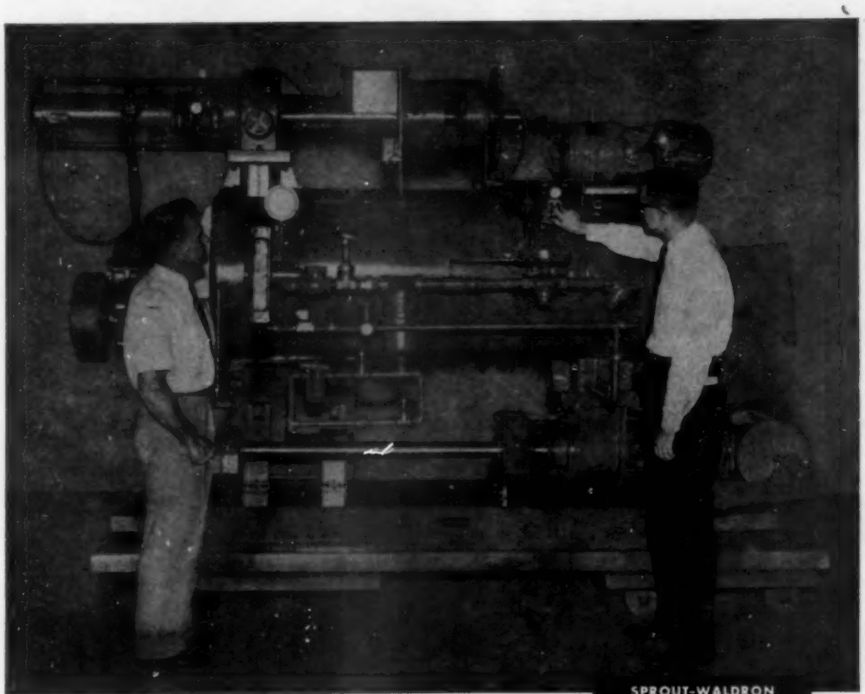

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SELLIN' SAM — By Jim Zilverberg

"Again? Such tenacity should be rewarded—send him in!"

not. If I decide to see him, I like to bust right in on him and put up my proposition. That's the way I am." He rose to his feet. "I don't mind sayin', though, I'm kinda disappointed in the attitude of some of you businessmen in this area, makin' it tough for a new farmer. That isn't the way it is down in Indiana."

Joe smiled. "I'm sorry, Mr. Bentham," he said. "If you were in the feed business, you'd have the same policy. If you get your bank loan, you'll find our feeds and service will help you a great deal in making a profit on your hogs. I've got at least 30 hog raising records in my files that I can quote to you, giving tips that will help you."

Mr. Bentham rose to his feet. "Well," he said gruffly, "I might come in and take a look at those sometime. Got to be goin' now."

Joe bid the fellow goodbye and walked to the door with him. "You'll find Mr. Hayward a wonderful man to deal with," he said.

The farmer ambled away.

Joe forgot about the fellow for a day because he was immersed in a sudden rush of business. One night he hailed Windy, the routeman. "Know a new farmer name of Bentham on Route 4?" he asked.

"Sure," said the lanky routeman. "I called on him, but he wanted to deal with the boss. Said he was comin' in to see you. I gave him and his family the usual giveaways—a yardstick, some pencils, a sewing repair kit for his wife—but it didn't seem to make any impression."

"He called," Joe said, "and wanted seasonal credit on his hog feed. I sent him over to the First National to see Pete Hayward. Sounds like a big hog operation. I hope we get his business."

"I'll call on him again," Windy promised, "and see if I can warm him up a bit."

Next day at a Chamber of Commerce luncheon Joe sat next to Pete Hayward, the banker. "Did a new farmer name of Bentham come to see you about a feed loan, Pete?" he asked.

Mr. Hayward smiled and shook his head. "No, he doesn't need to."

"Why?" Joe was puzzled.

A Dead Beat

"Didn't you know?" Pete grinned. "That fellow's a dead beat. He's got no credit. He's been traced from Indiana already and will have to pay on some old accounts there. Three of your competitors have phoned me about his credit, and his bank balance. He hasn't an account with us. Don't know where he has it."

Joe bit his lip. "So he took me for a sucker, eh? I had a sneakin' suspicion he wasn't all right, but I gave him the benefit of the doubt. And I sent him to you. You're in the business of lending money, not me."

The banker chuckled. "And we don't lend money for feed financin' or any other financin,' Joe, unless a farmer's credit is sound. Some customers just won't learn, will they?"

Turkey Clinic Held

ALTURA, MINN.—A key to higher turkey profits is better coordination between growers, servicemen and the feed manufacturer, more than 50 persons attending the recent Altura Turkey Clinic were told.

The turkey clinic was conducted by Altura Elevator Co. and Dawe's Laboratories, Inc., Chicago, for the Altura firm's servicemen and area turkey growers. Special attention was given to brooder house diseases.

Overcrowding and poor ventilation were cited as leading causes of problems in starting and growing turkeys. Growers and servicemen were warned by S. D. Formica, nutritionist for Dawe's Laboratories, that these conditions result in wet litter, thereby exposing birds to stresses and diseases.

Mr. Formica told turkeymen to anticipate weather changes when possible. He advised using a good stress additive in the feed or drinking water under adverse weather conditions.

The one-day clinic was concluded with a panel discussion. Members of the panel were Mr. Formica and Herb Pfremmer, territory manager, from Dawe's Laboratories and Don Simon, Frank Searcy and Harlan Kronebusch from Altura Elevator Co.

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Colony-Type Cages Tried in North Carolina

DURHAM, N.C. — The "stretched wire" colony-type cage laying house, fairly common in California, is getting a trial in North Carolina, with 12 of the houses in operation and at least 25 others under construction.

Layer operators throughout the eastern part of the U.S. are reported interested in the new buildings, which are an innovation for this part of the country.

The idea of developing the houses in the east started when John Hamby, Jr., director of poultry and egg marketing for Central Carolina Farmers Exchange in Durham, saw the houses while on a trip to California.

The buildings are spread over a five-county area in the Raleigh-Durham district.

The average house in the district is 11 by 160 ft. and houses approximately 2,000 layers. Eighteen layers are in a 3 by 3 ft. cage and the wire enclosures are 30 in. off the ground.

A concrete walkway, three feet wide extends down the center of the house. Cages are on each side and a feeding trough runs along in front of the cages. Automatic watering troughs are located at the rear. Eggs roll down into a wire holding tray.

"Less Expensive"

It is estimated the initial building and equipment is 50% less expensive than the conventional laying house in the Carolinas. No litter is required, saving the expense of gathering it, and also serving as a means of preventing spread of diseases.

Polyethylene plastic film was used for the siding in most of the houses this winter and some operators are looking forward to using an aluminum-based flexible siding next year.

The houses are relatively open, and superstructures consist mainly of supports for the roof.

Since the plastic sides have been instrumental in keeping the houses warm even in winter to a great extent, ventilation has been accomplished by opening hinged windows which are operated by pullcords. The windows are just under a flat-top roof.

One of the unsolved questions will be how much of a nuisance the fly problem will be this summer. It may be, growers said, that droppings will have to be removed frequently with the arrival of summertime. During the winter these droppings have been allowed to accumulate for several day.

Mr. Hamby points out that the houses are still in the experimental stage for the Carolinas, but if they prove satisfactory, and high hopes are held, they will save egg producers money.

Despite ususually cold weather this past winter the flocks in some cases averaged 80% production.

Arkansas Company Produces 12 Million Eggs Every 9 Weeks

HOPE, ARK. — The Delight Egg Co. of Hope is now producing 1 million dozen eggs every nine weeks, according to John Randolph, general manager.

Mr. Randolph said that most of the eggs are marketed in the Dallas-Ft. Worth area. However, the firm trucks 18,000 dozen to New York City weekly.

Delight Egg Co., which started as a branch of Cornbelt Hatcheries, has been in operation here about a year. Mr. Randolph said that most of the egg production in this region is on a contract basis with some 85 producers.

An expansion program is planned to increase the firm's volume, Mr. Randolph said.

He said the company operates on an expected production of 70% for a 12-month period for each of its Hy-Line layers. Records show that the hens averaged 246 eggs each in 1960.

Some 50 persons are employed processing the eggs in the firm's packaging facilities or in its cracking plant. The cracked eggs are used by bakeries and other food industries. The breaking plant uses 4,000 cases weekly, but current plans call for an expansion of this part of the operation. The cracked eggs are frozen in tins for shipment.

Mr. Randolph said that about 75% of the 300,000 layers in production at present are produced from Cornbelt chicks. The others are purchased from other hatcheries.

Under an agreement, Delight Egg purchases the birds from Southland farms when they are 24 weeks old.

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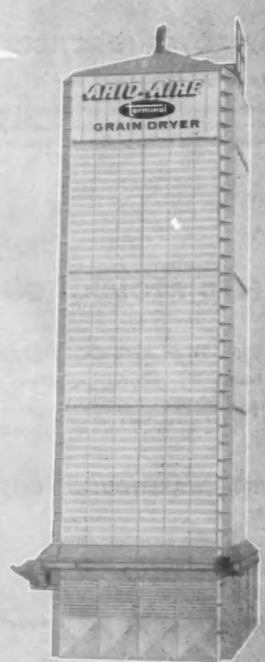

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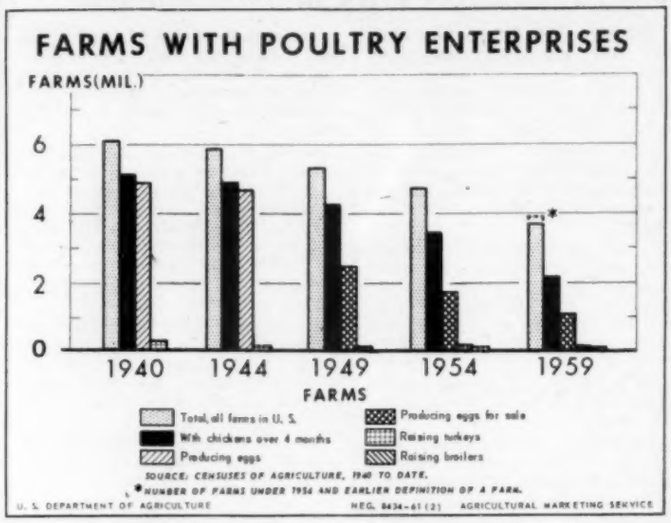


ANALYSES

(Continued from page 28)

any more in 1959. But is that disturbing? Not if you look beyond that.

"What you find is that an average Iowa farm bought $1,855 worth of feed in 1954—and $2,607 worth in 1959. The total amount of money spent for feed in Iowa increased 27% in those five years. A 27% growth in expenditures in five years' time is not bad for anyone who is in that business."

Along this same line, Doane Agricultural Service, Inc., St. Louis, notes: "There are now almost 800,000 farms with annual sales of $10,000 or above. According to a 1955 survey, farms in this category spend each year, on the average, $3,331 for feed, $1,673 for motor vehicles and machinery and $1,021 for petroleum products.

"In the future there will be more of these larger, more professional farm and ranch operators. They will be large enough to bring considerable bargaining pressure to bear on local suppliers. They will also demand more and better service from the companies supplying them. This is already becoming apparent in many cases."

"Who Will Sell Market?"

Mr. Gifford also had for his Kansas City audience some comments to follow his own question, "Who's going to sell the feed market?":

"As we all know," he said, "some farmers are getting large enough that they are tempted to mix their own feed. The larger the farm, the more likely they are to do it.

"So far, we don't have enough information from the census results to judge what's happening to farm size in terms of growth in animal units on the larger farms. But there are some indications that we can use which will apply rather obliquely.

"The real big places—in terms of land size—aren't about to take over agriculture at an increasing gallop," Mr. Gifford continued. "Between 1950 and 1954 there was an increase of 9,119 farms of 1,000 acres and over. This rate of increase fell to 5,778 farms between 1954 and 1959.

"Another factor is the ever-increasing competition for the use of the dollar on the farm. Every farmer must consider where the dollar will return him the most money—in fertilizer, production machinery, labor, environment control, mechanical feed handling, more livestock numbers, or in mixing feed. This is what the local feed dealer is competing with. He needs to argue his case on the economy of dealer feed handling, service and superior performance of the feed."

Future Credit Needs

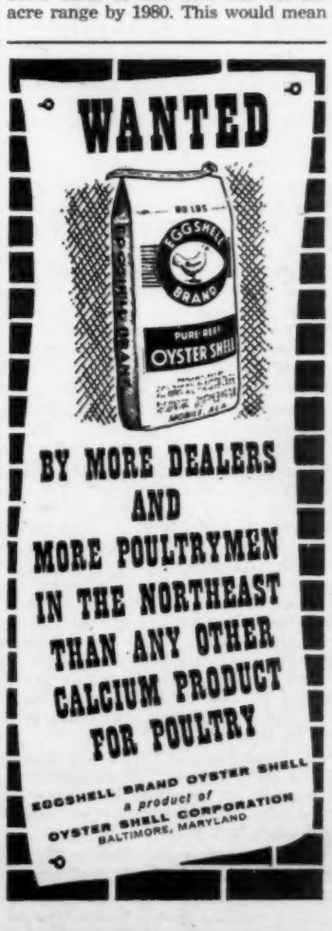
Increasing farm size has another face that the feed man needs to take a look at: Future credit needs of the producer.

Raymond R. Beneke, an Iowa State University agriculture economist, recently predicted that by 1975 the average Iowa farmer will need a capital investment of around $200,000.

He said the investment per farm will continue to rise as the size of farms increases and the number of farmers decreases. Increasing farm size, greater investments in production goods per farm and more intensive livestock production will mean doubling the amount of capital needed by 1975, Mr. Beneke said.

A change in financing is expected to be a result of this increased investment required for farming. Mr. Beneke believes that today's concept of working to get out of debt will be replaced by one which measures agricultural progress in terms of net worth. "Many farms will have to be resigned to being always in debt," he said, "and there is a trend toward more part-owner part-renter farm combinations."

Mr. Beneke expects the average Iowa farm to fall into the 260-499 acre range by 1980. This would mean



that in the next 20 years the number of Iowa farms would be cut in half.

But he doesn't expect to see the livestock industry follow the broiler business down the path of integration. However, he thinks there will be more specialization in livestock production.

"Inward" Pressures

The Farm Journal editor who spoke to feed men at Kansas City mentioned several "inward" pressures which he believes prevent agriculture from heading for unbridled farm size. Because of these forces, he said, "we won't find ourselves with a few mammoth farms raising all we'll need, with the little guy squeezed out."

Mr. Gifford further observed: "You might look on these inward pressures as the cohesive forces that hold the farm size together—forces that counteract the well-known forces that are causing farm operations to adjust to a larger size."

There are, he said, inward pressures on land, on livestock and on management.

"There's a limit on how far a farmer will go in distance to add land to his farm," Mr. Gifford noted. "But often the fellow next door is just as intent on enlarging his farm and doesn't want to leave. So each farm unit finds itself encircled; its expansion plans stymied.

"And there's little to be gained economically—in fact the farmer can readily lose money—by g r o w i n g beyond one set of land-working equipment, unless he gets big enough to use two full sets."

Mr. Gifford noted that livestock are tied to land size and are complementary with farm work and land use—and most livestock resist concentration.

Inward pressures on management include, as outlined by Mr. Gifford, at least two principles: "Labor problems are bigger than machinery problems" and "Managament can't be put on an assembly line."

Sales Representative

COMPTON, CAL.—M a n n Engineering Co. has been appointed sales representative in western Pennsylvania and West Virginia for Sutorbilt Corp., the manufacturer announced.

Mann Engineering's office is located in Pittsburgh. The firm has been representing Fuller Co., of which Sutorbilt is a subsidiary, for several years in a similar sales capacity.

Members of the Mann staff who will be participating in Sutorbilt sales activities include Robert Mann, Fred Baase and Jack Howard.

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Name Ag College Dean

DURHAM, N.H.—Dr. Harry A. Keener, professor of dairy science at the University of New Hampshire, and director of the Agricultural Experiment Station, has been named dean of the U.N.H. College of Agriculture. He succeeds Dean Harold C. Grinnell, who is retiring this year upon reaching the mandatory age for retirement of university administrators.

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AFMA Lists Additions To Management Recommendations

CHICAGO—The newest additions to the current series of standardized management recommendations developed by the American Feed Manufacturers Assn. Nutrition Council are entitled "23 Management Recommendations for Growing Dairy Cattle" and "30 Management Recommendations for Dry or Milking Cows."

Publication of the two leaflets brings to 13 the total number in the management recommendation series. This series has been developed by AFMA with the cooperation of the nation's land grant colleges, agricultural experiment stations, and the U.S. Department of Agriculture.

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Louisiana State University Reports On Research Work in Swine Rations

BATON ROUGE — Research into the value of adding tallow to rations of market swine and a study of the use of complete mixed versus free choice rations for swine are included in recently reported work from Louisiana State University here.

There was also a report on antibiotic combinations for growing-finishing swine.

VALUE OF ADDING TALLOW TO RATIONS FOR MARKET SWINE—A lowering of cost of gain in swine through adding tallow to rations was reported by Dr. D. M. Thrasher, C. W. Newman and Dr. A. M. Mullins.

The scientists report, however, that rate of gain was not increased significantly by adding tallow at either the 15% or 18% level of protein in the test. The test included 60 pigs, averaging 50 lb. at the beginning of the study, in six lots.

Levels of tallow fed were 0, 7.5 and 10% at each protein level.

The Louisiana research men said that for maximum gains the 15% protein level appears to be adequate.

However, they pointed out that the pigs receiving the 18% protein level as compared with the 15% required 6.5% less feed per 100 lb. gain. Even though the 18% rations were slightly more expensive, the cost of 100 lb. of gain was lowered slightly, they stated.

Adding either 7.5 or 10% tallow reduced the cost of gain when tallow was figured at 3.5 times the cost of corn, they pointed out. At either level of protein, 7.5% tallow was the most economical, they said. This was due, they said, to a large decrease in feed required per 100 lb. gain. When tallow is priced at less than 3.5 times the cost of corn, the reduction in cost per unit would be greater.

Effects on carcass value will be reported later, the men said. Previous work at the university was favorable to tallow but indicated that backfat thickness was increased at the 15% protein level. It was said at that time that it is possible that protein levels in excess of current recommendations are needed to prevent a decline in carcass merit when 10% tallow is fed.

COMPLETE FEED VERSUS FREE CHOICE RATIONS FOR SWINE USING THREE COMPLETE SUPPLEMENTS—No significant differences in rate of gain were found between complete mixed feeds or free choice rations with the three supplements tested, according to Dr. D. M. Thrasher and C. W. Newman.

The two Louisiana researchers reported that all lots of pigs tested gained satisfactorily and at nearly identical rates.

The experiment used six lots of eight week old Durocs. Soy, soy-meat scrap and complex supplements were used with ground corn in the complete mixed feeds and fed with shelled corn in the free choice portion of the test.

Dr. Thrasher and Mr. Newman reported that the pigs receiving the soy-meat and complex supplements free choice ate more supplement per day than pigs fed the soy supplement free choice. They said this was somewhat surprising since, at times, pigs tend to overeat on a soy supplement due to the palatability of soybean meal. They noted that the free choice consumption of soy supplement was slightly lower than the level provided in the complete mixed feed.

The two men said that differences among groups in feed required per 100 lb. of gain were very small. They pointed out that the free choice method reduced feed cost with all three supplements and the pigs receiving shelled corn and the soy supplement gained most economically. This, they commented, was due almost exclusively to the saving of grinding and mixing charges.

ANTIBIOTIC COMBINATIONS FOR GROWING-FINISHING PIGS—Rate of gain and feed conversion were both improved through use of combinations of effective antibiotics in a test at Louisiana State University, according to Dr. D. M. Thrasher and C. W. Newman.

The two men said the study was undertaken because recent work had indicated that combinations of certain effective antibiotics may outperform the same antibiotics fed alone. They said their experiment was planned to study the effect of various combinations of tylosin, streptomycin, penicillin and zinc bacitracin on the growth rate, feed efficiency and economy of gain of pigs.

Twelve pens with a total of 72 hogs, averaging 37 lb. at the beginning of the test, were used. All pigs had received Aureomycin in their feed before the experiment began.

Results reported by Dr. Thrasher and Mr. Newman follow:

During the first six weeks of the study, all antibiotic additives improved rate of gain from 4-17%. Ordinarily, the greatest pig response is observed up to 100 lb. live weight. These pigs averaged about 100 lb. after six weeks on test. The pigs receiving tylosin alone or in combination with streptomycin or penicillin gained 11-17% faster than controls during this period, but the differences were not statistically significant due to rather wide differences in rate of gain within each lot. Feed conversion was improved from 3-7% by the inclusion of antibiotics.

After 12 weeks, rate of gain was improved from 1-9% with the tylosin-streptomycin combination producing the fastest gain. Feed conversion was improved from 3-5%. Cost per unit of gain was reduced with antibiotics in the feed. The combination of streptomycin and penicillin improved gains very little but produced the lowest cost per unit of gain.

NEW COLORADO FIRM

WILEY, COLO.—Evans Turkey & Milling Enterprises, Inc., has filed articles of incorporation here to engage in "any commercial, industrial and agricultural enterprise." Listed as incorporators and initial board of directors were: E. C., Francis J., Catherine and Beulah Evans.

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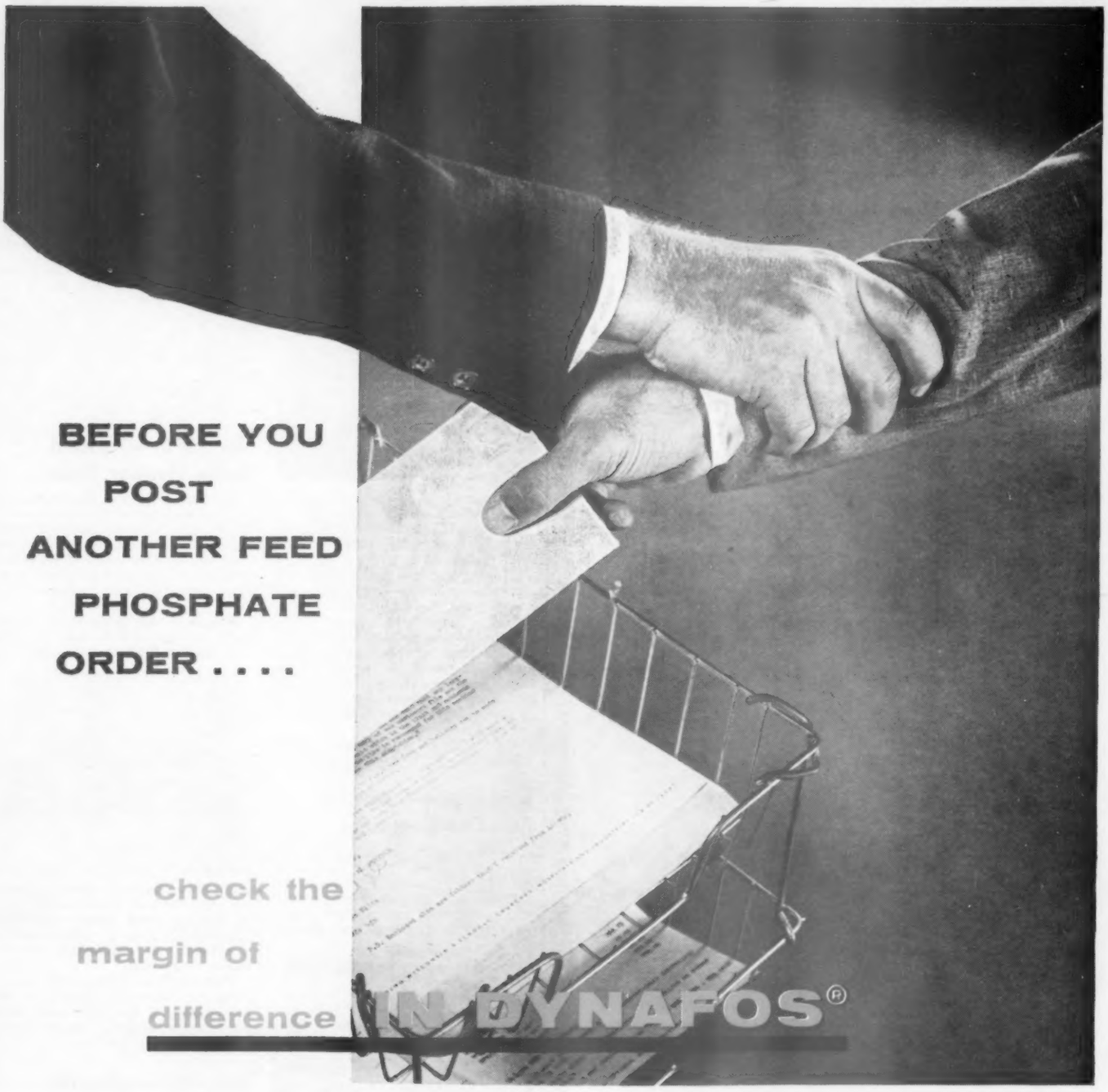

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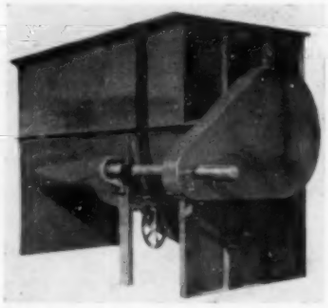
No. 7400—All-Purpose Blender

Details of the construction and operations of the Thomas all-purpose blender are now available in the new



bulletin, No. 1160-M, published by Thomas Conveyor Co.

The mixers are available in many sizes and are custom designed to fit the particular job in industry. For additional information, check No. 7400 on the coupon and mail.

No. 7405—Dehy Comparison Booklet

The National Alfalfa Dehydrating & Milling Co. has prepared a new booklet which shows some of the evaluations and comparisons of higher grade "feed nutrient" dehydrated alfalfa with regular dehy. The booklet, a company spokesman noted, gives dollars and cents answers to the question: "How much more are the higher grades of dehy worth?"

The booklet includes nutrient and valuation comparisons of 20% protein (Broiler-Layer Grade) dehy and regular 17% protein dehy.

Analyses of standard and critical grades, made by independent testing laboratories, are presented for comparison of relative amounts of seven primary nutrition elements, plus 19 minerals and 10 amino acids. Commercial values are given for the nutrients at current market prices.

The booklet may be obtained by checking No. 7405 on the coupon and mailing.

No. 7407—Dual Systems For Mobile Mills

B&L mobile mills may now be equipped to provide dual systems for both loading grains and other batch components, and for discharging finished feeds, according to announcement by the Barnard & Leas Manufacturing Co., Inc.

Availability of a new two-way air conveying unit for loading and unloading, says the manufacturer, has added a fourth conveying dimension to the B&L unit.

Standard materials handling equipment on the B&L includes a 10 ft. enclosed auger, hydraulically positioned and powered and mounted to swing over a 180° arc to increase convenience and efficiency of loading under various conditions. Also standard is a 12 ft., hydraulically powered, and positioned discharge auger.

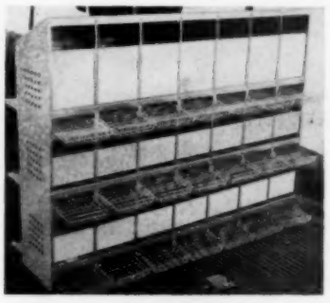
It is said that when an optional air discharge system is added to the B&L, the unloading auger is retained, thus providing two methods of discharging the mixer—each method has specific advantages under certain conditions.

With the new optional two-way air conveying system, both the discharge auger and the intake auger are retained, allowing the operator to load and unload his equipment in the way or combination of ways best suited to job requirements.

For additional information, check No. 7407 on the coupon and mail.

No. 7402—Rear Roll-Out Nests

The Fulton Co. has announced the addition of a rear roll-out nest to its line of egg gathering equipment. The roll-outs are of heavy-gauge steel wire coated with soft, resilient plastic to protect the egg shell from damage



and provide a comfortable nesting area for the hen.

The nests include galvanized steel back flaps and plastic curtains. They are available in 10, 14 and 21 square hole units. For additional information, check No. 7402 on the coupon and mail.

No. 7410—Filter Cleaning Service

A new service for cleaning, repairing and reconditioning filter tubes and sleeves used in the filter type dust collectors employed by industry, has been announced by the Day Sales Co.

Tubes of all types, sizes and materials (including felted wools, orlon, nylon and dacron) will be handled. The total service includes: removing tape and stitching, vacuum cleaning, thorough dry cleaning, inspecting the filter sleeves for quality and size, splicing in new material (if required) to return tube to proper size, and adding new tape and stitching.

It is said that this complete rejuvenating service restores the original

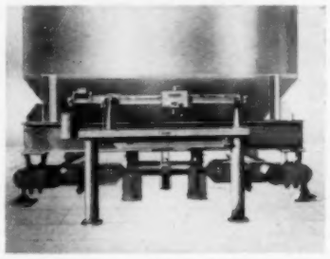
porosity of the cloth or felt tubes. Regular cleaning of filter tubes or sleeves keeps back pressures low and air volume high. Note photo that shows filthy, dirty dust filter tube and fresh, clean cloth after being reconditioned by the Day cleaning service.

For additional information, check No. 7410 on the coupon and mail.

No. 7399—Carload Grain Hopper Scale

Cardinal Scale and Manufacturing Co. has announced the development of the new Cardinal carload grain hopper scale which can be used for weighing of grain in terminal elevators, or any material weighed out in large quantity through a hopper system.

It is said that the carload hopper scale meets A.R.E.A. specifications, ICC Docket 9009 specifications and



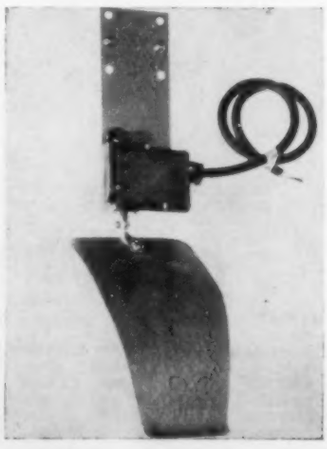
the U.S. Bureau of Standards Circular No. 199. It has full capacity type registering weigh beam with 5 lb. graduations, and is constructed of fabricated steel with structural weldments throughout.

The Cardinal carload grain hopper scale is made in 1,200, 2,000 and 2,500 bu. capacities. For additional information, check No. 7399 on the coupon and mail.

No. 7403—Control Level Switch

A completely automatic control level switch for bin, feeder, chute or other container is a new product of Hawkeye Steel Products, Inc. The new control switch is designed primarily for feed, but can be used for automatic level control of any material conveyed from storage to bin, chute, feeder or tank. It can also be equipped with a float to control the level of liquids.

The new switch is completely en-



Send me information on the items marked:

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- ☐ No. 7400—All-Purpose Blender
- ☐ No. 7401—Sedimentation Test Kit
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closed so that it is dust-proof, moisture-proof and splash-proof. There are a variety of methods for mounting the switch, but it must be in a vertical position. A straight sheet metal bracket is supplied for mounting the unit. This bracket may be formed to facilitate mounting on the side of a bulk tank or bin.

A hanging paddle triggers the switch mechanism. The switch is "on" when the paddle hangs vertically under the switch. As the paddle is lifted by inflowing material, the switch remains "on" until it reaches an angle of about 40°. At this point, the switch clicks "off" shutting off the in-flow of material. The switch remains "off" until the level of material in the bin drops to allow the paddle to swing back to the vertical position.

It is said that the differential travel of the actuating paddle of approximately 40° allows considerable change in feed level between off and on operation compared to the small differential travel allowed in most automatic feed systems. This eliminates short running time and "false" starts, thus saving on electricity and prolonging the life of the motor and switch, says the manufacturer.

The switch is rated at 15 amp running current for 125, 250 volts A.C., 60 cycles, and a maximum of 30 amps, inrush current. For controlling motors or devices rated higher than this, a contractor or relay is used.

The switch is adjusted at the factory for proper operation, but the control knob may be used to readjust the switch action. For additional information, check No. 7403 on the coupon and mail.

No. 7401—Sedimentation Test Kit

The new Zeleny sedimentation test kit is now available from the Seedburo Equipment Co. The kit is being manufactured by the Fred Stein Laboratories.

The test, a product of U.S. Department of Agriculture marketing research, is described as quick and simple to perform and inexpensive to make. It indicates the bread-baking qualities of wheat better than any other single test except the actual baking of a loaf of bread, says the manufacturer.

It is said that this test offers millers advance knowledge of the baking strength of the wheat they buy. For additional information, check No. 7401 on the coupon and mail.

No. 7412—New Grain Equipment Line

The Dempster Mill Manufacturing Co., manufacturer of crop-production equipment, has announced that it has moved into the manufacture and distribution of crop storage and conditioning equipment.

The new Dempster line includes standard size steel grain bins; "Big D" capacity steel grain bins; drying floors; Jetstream drying fans and heat units; grain spreaders; moisture meters, and bulk feed bins.

The Dempster standard bins are said to be built of heavy gauge prime galvanized steel sheets, fully corrugated, with steep pitch roof. They

are available in eight sizes from 1,000 to 4,400 bu.

The "Big D" bins are also built of heavy gauge galvanized and corrugated sheets with Z-iron bracing on the larger models. They are equipped with 20 in. x 20 in. crawl door and auger tube in the third ring. They are offered in diameters of 18, 21, 24, 27 and 36 ft. with capacities from 4,200 to 36,400 bu.

Heavy gauge steel is also used in the Dempster drying floors with designed perforations that are said to be grain tight while permitting maximum air penetration. They can be used with any type of grain bin or crib—round, square or rectangular—and with any type of drying fan and heat uit.

The fan and burner for the Dempster Jetstream drying fan and heat unit are contained in one shell. To use the fan alone, the heat unit is lifted out. The unit may be equipped with a humidistat, if desired, to automatically start the fan as humidity in the air rises above a pre-determined point.

Dempster grain spreaders are activated by the weight of falling grain, requiring no motors or wiring. The adjustable spouts distribute grain evenly in bins up to 30 ft. in diameter, eliminating solid packs of grain and deposits of chaff, thus permitting even flow of air throughout the bin. The spreaders may be used in flat storage buildings as well as with any standard round bin.

The Dempster moisture meter is electronically operated, providing an immediate reading without the use of charts. It is self-contained, weighs 12 lb. and operates off 115 volt line, or can be plugged into truck or automobile cigarette lighter with adapter.

The Dempster bulk feed bins offer most of the same construction features as the steel storage bins. They are available in capacities from 2 to 30 tons with full 60° hopper bottom. They may be equipped for completely "automated" loading, unloading and mixing.

For additional information, check No. 7412 on the coupon and mail.

No. 7409—Circular Bunk Feeder

An automatic circular bunk feeder system that employs use of a 50 ft. auger to distribute feed over 225 ft. of feed bunk, has been announced by the Wyatt Manufacturing Co.

The bunk feeder is based on a "curved bunk" idea which adapts the

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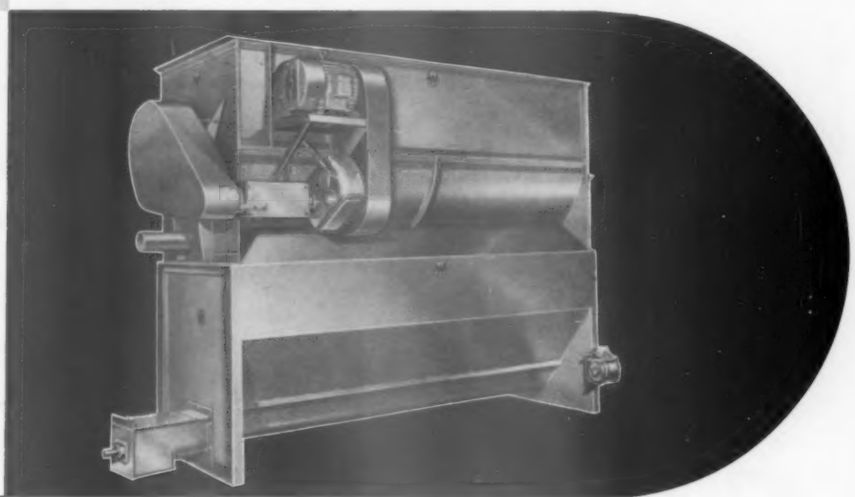

Engineered for maximum mixing through multiple agitation. Opposed ribbon spirals convey in opposite directions while paddles fold in center core of the batch.

Today's quality controls demand this better mixer. Multiple agitation of ribbon and paddle combination provides the most rapid and complete mixing action. Heavy duty construction permits closer tolerances than possible in other mixers. Outboard bearings eliminate contamination of feedstuffs by lubricants and reduce bearing wear.

Leveling screw in surge bin permits complete utilization of bin capacity resulting in lowest possible over-all height (mixer and surge bin 10 ft.) and consequently reduces excavation and other installation costs.

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old straight-line feeding principle to an arc of 50 ft. radius; 1 ft. of auger supplies feed for 4½ ft. of bunk.

The feed bunk, which can be constructed of wood, concrete, brick or cement block, utilizes a curved formation up to 270°. In operation, the feed is directed from bulk feed bins, silos, etc., to a hopper mounted on a swinging auger which pivots on a center post in the center of the feed bunk arrangement.

From the hopper, the feed moves through the 50 ft. auger to a flexible spouting and is fed freely, by gravity, into the feed bunk as the auger slowly travels on its track back and forth over the bunk, evenly distributing the completely mixed feed.

All moving parts of the circular bunk feeder are mounted approximately 7 ft. off the ground. The flexible spout, which drops the feed into the bunk, "travels the bunk area within reach of the cattle, but its pliability and slow speed rule out any chance of injury to cattle," officials claim.

The feed bunk's use is adaptable to cattle on different types of feed in the same pen and fed from the same bunk. In this application, the auger traverses one section of the bunk until feeding is completed, then it can be switched to the other section and the type of feed changed to automatically supply the correct ration, says the manufacturer.

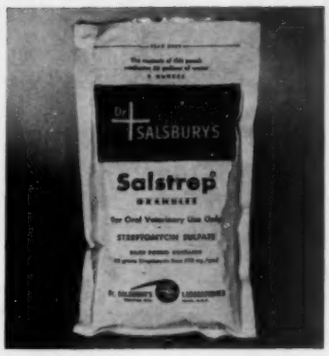
It is said that a 225 ft. circular type feed bunk will provide enough feeding space to handle from 225 to over 450 head of cattle using both sides of the bunk. A 75 ft. curved feed bunk in a 90° arc provides room to feed 75 to 150 head.

For additional information, check No. 7409 on the coupon and mail.

No. 7408—Antibiotic Water Medication

Dr. Salsbury's Laboratories is marketing Salstrep Granules in an 8 oz. pouch. Each pouch of this antibiotic drinking water medication will medicate 50 gal. water for poultry, swine and calves. Twenty pouches are enclosed in a 10-lb. shipping carton.

Salstrep Granules is used as a treatment for chronic respiratory disease in chickens, for treating blue-comb in turkeys, for controlling nonspecific infectious enteritis in chickens and turkeys, for combating stress conditions in chickens and turkeys, and for treatment of scours in swine and calves. The product contains 110 mg. Streptomycin base per gram.



For additional information on this product, check No. 7408 on the coupon and mail.

Paper Shipping Sack Manual

An extensive manual giving recommended practices for handling, storage and shipment of material packed in paper shipping sacks has been prepared by the Paper Shipping Sack Manufacturers Assn.

The manual presents basic information on the various types and uses of multiwall paper bags. Then, through text and illustrations, the manual covers many aspects of the handling of paper shipping sacks.

The different sections go into such things as these: Storage of empty bags and the importance of humidity control; closure methods; loading hand trucks and skid platforms; proper handling methods; palletizing; automatic palletizing facilities; bag conveying equipment; selection and preparation of railroad freight cars for loading; preparation and loading of motor trucks, unloading, recoopering damaged sacks; storage of filled shipping sacks; salvaging; and methods of specifying outside measurements of sacks.

The manual is called General Manual No. 4. Copies are available at a price of 50¢ each from the Paper Shipping Sack Manufacturers Assn., 370 Lexington Ave., New York 17, N.Y.

No. 7404—Twin Screw Feedmobile Mixer

A new Daffin Feedmobile mixer that incorporates engineering improvements to further enhance mixing accuracy and unloading characteristics, has been announced by Daffin manufacturing division, Daffin Corp.

The new Daffin "Twin-Screw" mixing action includes an improved system of "blending blades" mounted above the horizontal mixing auger to produce "greater uniformity from the combination vertical-horizontal mixing-blender."

Auxiliary benefits resulting from the new "Twin-Screw" action, according to the manufacturer, are greater bearing strength and longer auger life, plus improved speed in

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GREATER PROFITS
thru SUPER-PERFORMANCE

800 to 1600 Bu per HOUR
machine picked corn

Bryant CORN SHELLERS
LAST LONGER . . . COST LESS TO OPERATE

Bryant Corn Shellers give you Fast . . . Efficient . . . Low Cost Shelling . . . FAST is the word for it . . . 800 to 1600 bu. of shelled corn per hour of machine picked corn with the Bryant No. 40 Sheller. This simple one-motor machine shells machine picked or snapped corn with shucks, cleans the shelled corn and blows cobs and dirt up to 300 feet. The Bryant Corn Sheller's rugged construction and compact design plus low maintenance, make it an outstanding machinery buy.

BRYANT CORN SHELLERS ARE MADE IN FIVE SIZES WITH CAPACITIES RANGING FROM 200 TO 1600 BU. PER HR.

A SIZE FOR EVERY NEED!

Bryant Coarse Crusher can be mounted on sheller hopper and driven by separate motor or from sheller shaft. Extra long shaft is not required.

Bryant No. 30 Coarse Crusher will give you a 15% to 25% Capacity Increase on your Corn Sheller!

The Bryant Coarse Crusher, made in three sizes, 22", 30", and 36" to meet all requirements, and used ahead of your sheller to protect sheller from tramp iron, stones and other foreign material, will also increase the capacity of your sheller. Breaks up the ears for faster, smoother shelling. Three sizes handle from 1,000 to 2,000 bu per hour.

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THE NEW

HAS THE COMPLETE STABILITY YOU'RE LOOKING FOR!

A FULL RANGE OF STABILITY...that's what makes the new STABIMIX E your most valuable supplemental source of vitamin E in the feeds you mix!

STABIMIX E is *stable* in both animal and poultry feeds, even when stored for long periods of time . . . *stable* when exposed to wide ranges of temperature and humidity . . . *stable* in pelleted feed . . . and *stable* in the presence of minerals. A *most complete* range of stability for milling use.

STABIMIX E is free flowing. The vitamin E beadlets in STABIMIX E are given a protective coating of *readily-digestible* materials.

STABIMIX E remains in uniform distribution in a mixed feed . . . will not arch in bins, hoppers or mechanical feeders. Containing only dl-alpha tocopheryl acetate as a vitamin E source, STABIMIX E is *fully active biologically.*

Because the vitamin E contained in STABIMIX E is in an emulsified form, it is absorbed more rapidly than from the oil-solution forms.

To meet the requirements of most feed manufacturers, STABIMIX E is conveniently packaged in *two* potencies: 50,000 *and* 20,000 International Units per pound . . . each in 50-lb. and 100-lb. fiber drums with liner.

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Merck Chemical Division, Merck & Co., Inc., Rahway, N. J.

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THE MOST STABLE VITAMIN E FEED SUPPLEMENT

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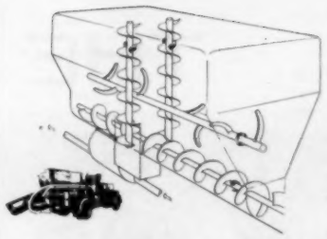

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No. 7411—Molasses Feed Mixer

The availability of a new bulletin describing a continuous double agitator molasses feed mixer for custom mixing, has been announced by Sprout, Waldron & Co., Inc.

The bulletin illustrates bottom and end discharge types, gives dimensional details and suggested arrangement for molasses control stand.

For a copy of this bulletin, which is designated Bulletin 111-A, check No. 7411 on the coupon and mail.

No. 7406—Caged Layer Folder

A new folder which outlines the profitability of Babcock layers in cages has been produced by Babcock Poultry Farm, Inc.

Entitled "Babcock Layers Will Make Your Cage Operation Even More Profitable," the folder tells in detail the specifications and performance of these strain-cross White Leghorns. The illustrated brochure also reports on random sample test results.

For a copy of this folder, check No. 7406 on the coupon and mail.

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The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

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No. 7369—Feed supplements, Vit-A-Way, Inc.

No. 7370—Feeder machine, The Eriez Manufacturing Co.

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Reports Research on Salt Levels for Broilers

WASHINGTON—What about salt levels in diets for broilers?

Research which provides some answers to this question was reported in a special session at the Maryland Nutrition Conference. Dr. J. M. Snyder, director of research for Beacon Milling Co., Cayuga, N.Y., outlined research results on levels of added salt and on the amount of salt in water.

In a 42-day test at the Beacon poultry research farm with birds in batteries, levels of added salt ranged from .15 to .45%. Total salt by analysis (excluding water) ranged from .272 to .588%. Weight in grams ranged from 1137 (.45% added salt) to 1167 (.25% added salt). Conversions were between 1.78 and 1.82.

Under conditions of this experiment, Dr. Snyder said, the optimum results were obtained with .25% added salt. There were no discernible differences in weights or feed conversion whether the salt level added was .15, .25 or .35%.

Dr. Snyder presented Beacon data on the salt content of water at several places in Delmarva, with samples taken in different years in some cases. There is considerable variation in the salt level in the water from area to area on the Delmarva peninsula, the scientist pointed out. In one case, the salt content of the water went up to 308 ppm. This would be equivalent to an added salt level in the feed of .062%. Therefore, said Dr. Snyder, this salt level is not alarmingly high.

The Beacon researcher went on to present data on salt levels from the Borden research farm. The results were for broilers at 8 weeks and 4 days. Levels of added salt were from .25 to .50%. Under conditions of this experiment, the optimum level of added salt was .35%. There were no obvious differences in performance dependent on any of the levels used.

Levels of added salt ranging from .15 to .60% were used in a 42-day Beacon test with birds in batteries. Under conditions of this test, the optimum level of added salt was .20%, giving a total salt level in the diet of .341%. There was no significant difference among any of the salt levels tested.

M. L. Bayern in New Post for Cyanamid

NEW YORK—M. Lawrence Bayern of Princeton, N.J., has been appointed animal industry representative for American Cyanamid Co.'s agricultural division. His duties will be performed in New Jersey and eastern Pennsylvania.

M. L. Bayern

Previous positions held by Mr. Bayern in the company were as animal feed representative in the north central states, food industry representative in the north eastern states and assistant to the animal industry product manager.

Senator Aiken Hits Feed Grain Bill

MONTPELIER, VT.—The feed grain bill and other phases of President Kennedy's farm program will put this state's important dairy industry "behind the eight ball," U.S. Senator George D. Aiken (R., Vt.) has told members of the Vermont legislature.

The senator cited measures which would open the eastern markets to milk produced in the Midwest and other plans that "would affect our industry by simply raising our costs of production to a point at which we could not profitably compete." These proposals, Sen. Aiken declared, would boost the cost of corn and other feed grains through reducing the number of acres planted in commercial feed grain crops.

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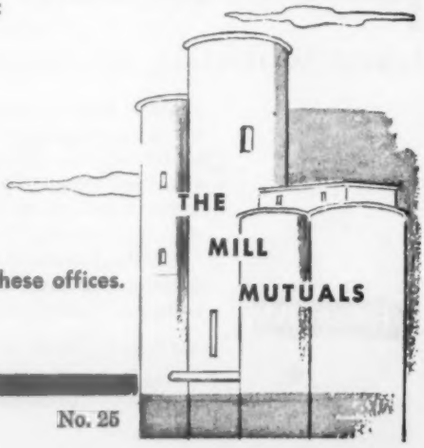

No. 25

FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Functional Labeling

In the consideration of the meaningfulness of present day labeling, the place of "functional labeling" will undoubtedly come into the discussion. The proposal (dated Jan. 19 and published Jan. 27) of a "fat preservative, fat antioxidant; definition and standard of identity," was welcomed by many. FDA is now considering the response to this proposal and final action is awaited. If this is approved, such antioxidants as BHT and BHA and some 11 or more others, depending upon those finally agreed upon, will no longer need to be declared in an ingredient list of the final mixed feed unless the manufacturer chooses to do so. An expression such as "Fat Preservative Added" or "Fat Antioxidant Added to Retard Rancidity" was suggested in the proposal as label nomenclature.

This is "functional labeling." Many quarters have long pushed for this type of labeling. The answer of FDA people and state enforcement officials has always been "the common or usual name is called for." As long as this is in our laws there is no other choice. However, in special circumstances it is permissible to use "functional labeling." Spices, flavorings and colorings have long been so designated. This is possible because they are especially mentioned in the Food, Drug and Cosmetic Act. Chemical preservatives are also defined there. The model state feed bill provides for "the use of a collective term for a group of ingredients all of which perform the same function."

As would be expected, not everyone favors "functional labeling." At one extreme are those who would insist upon the common or chemical name of the preservative as well as the expression "Fat Antioxidant Added to Retard Rancidity," in the present instance. The wording of such labeling must be patterned to fit specific uses if a majority are to be happy with it. What might please the mixed feed manufacturer may not suit other interests. Bakers prefer "shortening" to "fat" on their labels. "Fat" is likewise undesirable to the potato chip people. They would prefer "oil." The candy and peanut people suggest "vegetable oil" be substituted for "fat" where this term applies.

The "functional labeling" of an ingredient as an idea is closely akin to a statement of reason for an ingredient's introduction. The expression "source of ————" following the declaration of an ingredient is quite common. In many cases when this is done no unitage guarantee is made for the quality mentioned. It has often been suggested: Why not do away with the ingredient listing of the source in such cases and simply make a guarantee for "vitamin ————," for example, along with other guarantees in the chemical guarantee? This might require changes in feed and other laws but is one of the possibilities being considered.

Ingredients used in recognized combinations, in special instances, may be declared by using a "defined" term. The term "gravy" is defined and used although it is made up of individual ingredients. Such products as iodized salt and trace mineralized salt represent items that are made up of individual ingredients. These and other similar usages when accepted are predicated upon recognized standards of identity.

Why not have standards of identity for certain types of feed? For example, a milk replacer, if defined, might then be sold with no more reference to its identity other than the name of the product if permissive legislation or regulations existed. "Functional labeling" therefore might be carried far beyond its present very restricted limits.

Merck & Co. Elects Dr. Luther S. Roehm

RAHWAY, N.J.—Dr. Luther S. Roehm has been elected vice president for marketing of the Merck chemical division by the board of directors of Merck & Co., Inc. Dr. Roehm will be responsible for marketing and development activities for the company's products serving the agricultural, medicinal, food and industrial markets. He will assume his new duties on April 17.

Dr. Luther Roehm

Dr. Roehm was formerly a vice president of the A. E. Staley Manufacturing Co. of Decatur, Ill. Before joining Staley in 1951, he was assistant general sales manager of the Dow Chemical Co.

Development of new products and cultivation of new market areas will be one of Dr. Roehm's most important duties, said Dr. William H. McLean, division president.

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CRD, Effect of Management Discussed At Poultry Health Event in Washington

WASHINGTON — Problems ranging from the various phases of the chronic respiratory disease to physiological responses to management were discussed at the recent Research Conference on Disease, Environmental and Management Factors Related to Poultry Health here.

Reports on other topics discussed at the conference held at Jefferson Auditorium of the U.S. Department of Agriculture March 20-22 appeared earlier in Feedstuffs (March 25 and April 1). Sponsors of the meeting were the USDA Agricultural Research Service and the University of Georgia.

Topics covered in this review of the meeting include: Factors influencing transmission of poultry diseases, the importance of thermal environment, coccidiosis, salmonella infections, the avian leucosis complex problem and neglected opportunities for genetic control of poultry diseases.

CURRENT EVALUATION OF CHRONIC RESPIRATORY DISEASES—Egg transmission of chronic respiratory disease appears to be the primary mode of dissemination of this major disease problem in the chicken and turkey industries, according to Dr. Henry Van Roekel, department of veterinary science, University of Massachusetts.

He stated, "Transmission of the disease through direct and indirect means of contact may also play an important role in the perpetuation of the disease. It is essential that these different modes of transmission be recognized in attempts to control the disease in broiler and table egg-producing flocks. Establishment and maintenance of CRD-free flocks are possible if stock free of infection is reared in a suitable environment. The dipping of hatching eggs with certain antibiotics to reduce or eliminate the infection within the egg has yielded promising results. If this tool proves to have merit, it should be effective in establishing CRD-free flocks.

"Medication for the prevention and control of CRD outbreaks has yielded variable results. Recently the effectiveness of certain antibiotics has been increased through potentiation with low calcium diets and terephthalic acid.

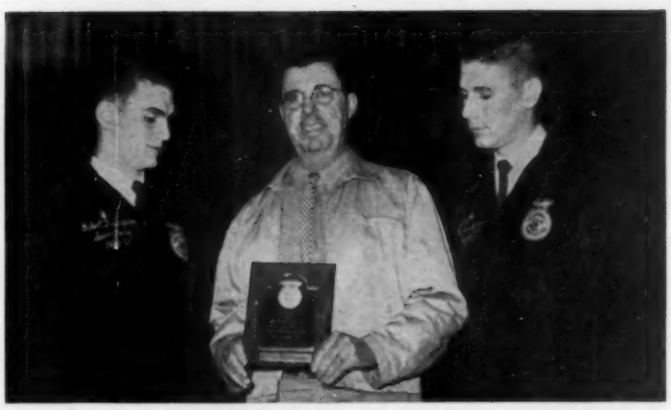
"Control and prevention of the disease through immunization remain virtually unexplored. This entire aspect of the disease should receive thorough investigation.

"Lastly, the full significance of CRD in the airsacculitis syndrome cannot be established unequivocally until we can produce, consistently, stock free of CRD in a clean environment."

Dr. Van Roekel said the etiology of the disease is known but knowledge concerning possible sero types and their host parasite relationships is incomplete. Further exploration concerning these aspects of the agent is necessary to improve tools needed for reliable diagnosis and effective control of the disease.

THE ROLE OF THE PRINCIPAL ACUTE VIRAL RESPIRATORY DISEASES IN THE CHRONIC RESPIRATORY DISEASE — AIR SAC SYNDROME—Dr. L. C. Grumbles, Texas A&M College, said that surprisingly few experiments have been designed to show the role of infectious bronchitis, Newcastle disease or laryngotracheitis in CRD-air sac infections.

Chronic respiratory disease was first recognized during efforts to clarify persistent respiratory symptoms following infectious bronchitis immunization, he commented. "Thus, from the first, CRD has been closely associated with acute viral respiratory infections," Dr. Grumbles said. "However, controlled experiments, careful laboratory studies on field cases and critical observations have conclusively revealed that acute viral respiratory infections may: (1) activate latent mycoplasma infections, (2) "trigger" field outbreaks of "air-sac" disease, (3) increase impairment of performance and (4) cause much more severe symptoms and lesions in birds with the CRD-air sac syndrome."



FFA AWARD—More than 400 vo-ag students from 12 eastern Missouri high schools competed in an FFA livestock, poultry and soils judging contest held annually at the Purina research farm near Gray Summit, Mo. A special feature of this year's field day was the awarding of a plaque by the State FFA Assn. to the Purina research farm "in appreciation of outstanding service to the FFA by the Purina research farm." Shown here are, left to right, Robert Thompson of Rolla, Mo., secretary of the state FFA organization; John M. Wear, manager of the Purina research farm, and Keith Bodenhausen, Gower, Mo., FFA state president. Mr. Wear is holding the plaque which was presented to him by the two state FFA officers.

THE PROBLEM OF E. COLI IN AIR SAC INFECTION — Dr. W. B. Gross, professor of veterinary science, Virginia Polytechnic Institute, Blacksburg, Va., said that from research done there the following explanation of air sac disease outbreaks has been postulated:

"Small numbers of PPLO infected birds hatch with normal chicks. The spread of PPLO to contact chicks is favored by virus infections (field or vaccine strains), low brooding temperature, poor ventilation and crowding. The bird centers its defense mechanism against the PPLO, IBV and NDV. This defense is slanted strongly in the direction of the mononuclear cells, particularly lymphocytes. The effective defense against pathogenic E. coli is an early heterophile response. Since the pathogenic strains of E. coli are commonly found in feed and litter, a source of bacteria is frequently available. Respiratory disease infected birds which cannot make a strong heterophile response following aerosol exposure to E. coli develop pericarditis and many die. The E. coli infection is of very short duration, requiring less than five days for pericarditis to develop or for a resistant bird to control the infection and body temperature to return to normal. It may take a month or more for the heart and liver lesions to heal even if adequate therapy is administered."

The Virginia professor said that other diseases or lesions caused by pathogenic type E. coli are panophthalmitis, salpingitis, peritonitis, a fowl typhoid like disease and synovitis.

PHYSICAL FACTORS THAT CAN INFLUENCE TRANSMISSION OF POULTRY DISEASES—William R. Hinshaw, Chemical Corps Liaison, Representative Animal Disease Investigations, Ft. Detrick, Md., told the persons attending the symposium that if maintenance of disease free flocks is impossible, then "convalescent rearing" becomes important and engineering research on housing and environment factors as they affect the health of the bird becomes even more important.

He said that one of the major problems in broilers concerns rearing them to a marketable age with maximum gain and minimum condemnation. However, he pointed out that it appears that most broods are exposed to chronic respiratory diseases. Thus, he continued, the problem becomes one of "convalescent" rearing.

Physical factors influencing the transmission of disease pointed out in the presentation were equipment, floor, feeding and watering space, ventilation with respect to air movements, temperature and humidity, feed storage, manure and litter handling.

PHYSIOLOGICAL RESPONSES TO MANAGEMENT—There is a belief that high blood pressure birds are better able to withstand greater disease exposure and stresses than low blood pressure birds, according to Dr. Paul D. Sturkie, professor of poultry physiology, Rutgers University, New Brunswick, N.J.

He said, "Most of our experiments over a number of years show that, contrary to results in humans, low blood pressure kills more chickens than high blood pressure; however, in some years, when conditions are optimum, there may be no difference in mortality.

"We exposed high and low blood pressure chickens to low temperature and found that survival time of

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the hypertensive birds was greater than for the hypotensive ones," he said. "We also subjected adult males and females to exercise on a treadmill and measured the time required for exhaustion. The hypertensive females did not fatigue as readily as the hypotensive ones."

THE IMPORTANCE OF THERMAL ENVIRONMENTS IN POULTRY HOUSING—"The proper balance of heat input and output is necessary for warm-blooded animals," said Robert G. Yeck and Hajime Ota, USDA's Agricultural Research Service.

"Loss of production, lowered resistance to disease and eventually death have occurred as the balance between heat input and output was lost. Some of these effects may be noted even as this point of imbalance is approached, presumably due to the extra effort required to maintain homeothermy when faced with adverse thermal environments. The imbalance between heat input and heat output may be recognized by abnormal rectal temperatures. This occurs at some air temperature between 85 and 95° F. The exact temperature varies among birds both within and among breeds. Age and condition of the poultry are also a factor. Evaporative heat dissipation becomes increasingly important with increasing ambient air temperatures —accounting for more than one-third of the total heat loss at 80° F. Sensible heat losses (the total of radiation, convection and conduction) decrease with increasing temperature."

THE SALMONELLA INFECTIONS (PULLORUM, TYPHOID AND PARATYPHOID)—Cooperative efforts in typing of salmonella cultures will help to bring the salmonella infections under more effective control, according to D. E. Stover, Bureau of Livestock Disease Control, Division of Animal Industry, State Department of Agriculture, Sacramento, Cal.

He commented that prompt isolation, identification and typing of salmonella organisms when present in poultry, their feed or their environment and the immediate reporting of these findings to the responsible disease control officials are considered important. The laboratories of the state departments of public health in several states and the Communicable Disease Center's Enteric Bacteriology Laboratory, Chamblee, Ga., have been very helpful to livestock and poultry pathology laboratories throughout the country in typing of salmonella cultures, he added.

Mr. Stover said that a proposed federal regulation on the interstate movement of poultry and hatching eggs has been introduced for consideration. If finally adopted, this regulation will, next to the adoption of the national plans for poultry and turkey improvement, be the most important step ever taken in the attempted control of pullorum disease and fowl typhoid, he stated.

He pointed out that several states have developed fairly effective salmonella typhemurium testing services for controlling this infection in turkeys. Doubt has been expressed that flock testing will contribute generally to the solution of the paratyphoid problem, he said. The importance of early formaldehyde-gas fumigation of chicken and turkey eggs and other sanitary measures are now being emphasized.

COCCIDIOSIS—Coccidiosis breaks during the five day withdrawal period have complicated processing and marketing problems, according to Dr. W. Malcolm Reid, poultry pathologist, University of Georgia.

He commented that morbidity losses are still a matter of concern especially in the broiler industry. From 10-12% of the accessions in diagnostic laboratories are reported as showing intestinal coccidiosis. Field service reports indicate the coccidiosis induces serious stresses in birds 5-8 weeks of age.

He suggested continued research or development in the following fields:

(1) A continued search for cheaper and better coccidiostats should be encouraged by the pharmaceutical industry. The possibility of a coccidiostat which is safe enough and cheap enough to be used throughout the life of the bird may have merit.

(2) Comparison of and evaluation of coccidiosis control programs with emphasis on field performance needs to be continued by neutral governmental agencies. With layers more emphasis needs to be placed on relationships between coccidiostats and immunity.

(3) Search for improving methods of application and efficiency for planned immunization programs needs to be encouraged. A search should be continued for non-virulent strains of coccidial species for such purposes.

(4) A rapid method of detecting flock immunity such as the fluorescent antibody technique would assist in study of planned immunity pro-

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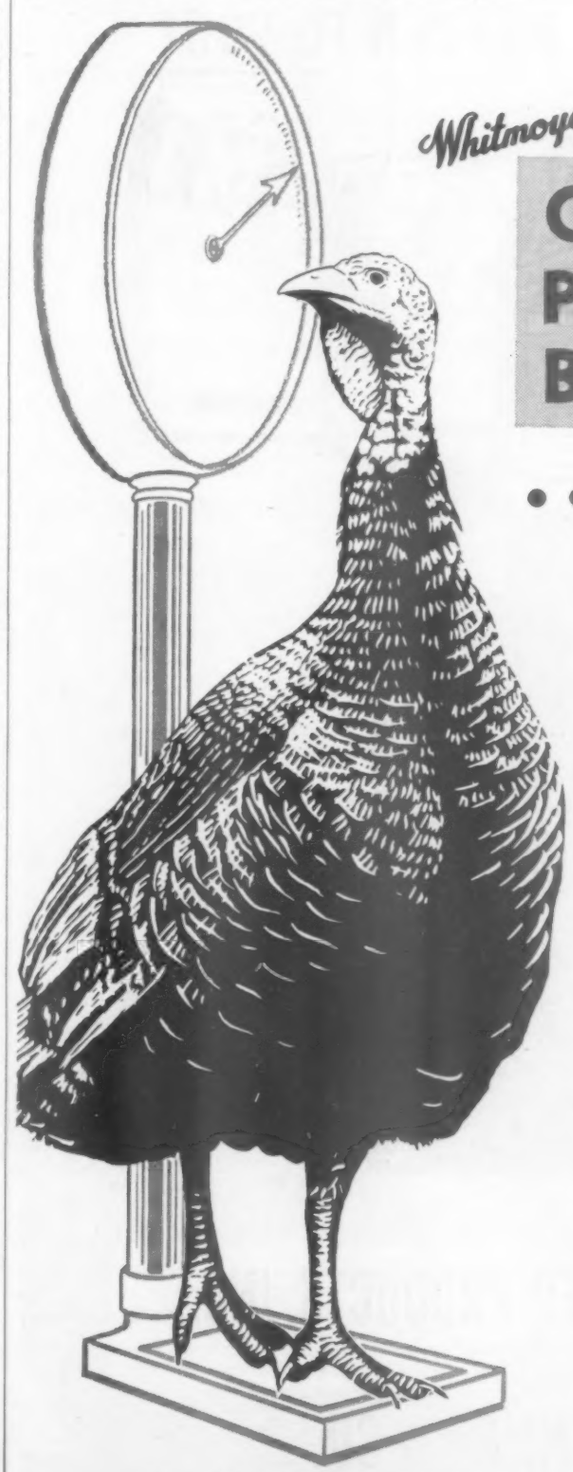

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ANNIVERSARY SALES MEETING—Bryant Engineering Co., Port Huron, Mich., manufacturer of feed mill and grain elevator equipment, recently held its golden anniversary sales meeting. The meeting was directed by John W. Miller, Bryant's vice president. The field men were introduced to new products, improved products and a special course was held in maintenance and engineering. At the windup, Mr. Miller announced a special 50th year sales contest; the winners and their wives will travel to a South Seas island early next year for a week of fun, sun and relaxation.

Attending the meeting from left to right, front row: Paul Jackel, Edwin Seving, Nathan Jakel, Chet Smith, John Miller, vice president; James G. Bryant, president; Robert Schmidt, Bryant engineer; John Holiday, George King, Gil Albright; second row: Al Mayer, Oscar Ulrich, Russell Henson, Joe Jakel, Clyde Poff, Wilbur Hoffman, Earl Toney, Bart Roach, Bryant production manager; third row: Kenneth Henson, Whitey Schlagetter, Hal Graham, Sterling Crabb, Dick Carey; fourth row: Gerald Fitzgerald, Bart Daily, Jack McClure, Gerald Sutton, Harmon Fox, Bill Fox, John J. Woods; fifth row: Bernie Kadow, Bryant district manager; Herman Baker, Norman Sanders, John Murdoch, Herb Ryan. Larry Stradtman of Iowa also attended but is not shown.

grams and in the relationships between coccidiostats and immunity.

(5) The establishment of a repository of coccidial species and strains which would make them readily available for research purposes needs further study and implementation.

THE AVIAN LEUCOSIS COMPLEX PROBLEM—Losses due to avian leucosis continue to be quite high and, in fact, are increasing in many areas where losses due to chronic respiratory diseases have remained almost unchanged, report T. D. Fredrickson and B. R. Burmester, Regional Poultry Research Laboratory, East Lansing, Mich.

They say that "among the greatest research needs with this disease are the development of a rapid serological diagnostic test and the development of a procedure of control by the use of a vaccine."

The two researchers report that recently "leucosis has been observed in many flocks as an acute outbreak of disease. Neural lymphomatosis as well as visceral involvement is often seen in these acute outbreaks. It should be emphasized that the classic visceral lymphomatosis is still a major cause of leucosis in older birds.

"Experimental work at the Regional Poultry Research Laboratory has shown that the RPL12 tumor virus can induce visceral lymphomatosis, erythroblastosis, osteopetrosis, endothelioma, and fibrosarcoma. The particular tumor induced varies largely with the dose of virus inoculated and the age of the chicken at the time of inoculation. The genetic constitution of the chicken is no doubt also important."

NEGLECTED OPPORTUNITIES FOR GENETIC CONTROL OF POULTRY DISEASES—"The fact that losses from leucosis can be greatly reduced by using stock bred for genetic resistance to that disease suggests the desirability of similar genetic control wherever it can be effective against other diseases which, like leucosis, are difficult to avoid," says Dr. F. B. Hutt, professor of animal genetics, department of poultry husbandry, New York State College of Agriculture, Cornell University.

"The greatest opportunities (but not necessarily the easiest problems) lie in breeding strains and crosses resistant to pathogens that are enzootic, not likely to be eradicated, and difficult to control by such orthodox procedures as sanitation, blood tests, vaccination and the administration of drugs and antibiotics."

Also, Dr. Hutt commented that in many of the so-called nutritional diseases such as encephalomalacia and perosis of broilers and arthritis of turkeys the evidence indicates that in most cases the basic deficiency is not in the diet but in the genetic constitution of the few birds that cannot function on amounts of certain elements that are fully adequate for most of the flock.

NEW USDA POULTRY RESEARCH LABORATORIES—Details on two new poultry research laboratories of the U.S. Department of Agriculture were announced at the meeting.

The two facilities will do work on the problems of poultry health involved in the condemnation of poultry, particularly broilers. These facilities are to be specifically for research on interrelations of disease, environment and management.

It was stated that construction is expected to begin in July on the larger of the two units to be located on the campus of the University of Georgia. Plans are not yet complete for the facilities to be built at Mississippi State College, it was stated.

Early & Daniel Co. Names Charles Saul

CINCINNATI — Charles B. Saul has been named general transportation manager of The Early & Daniel Co. by Evans Harrell, executive vice president of the Cincinnati headquartered company.

Charles B. Saul

Mr. Saul is a practitioner before the Interstate Commerce Commission. A native of Virginia, he has been associated with Lindsey-Robinson & Co. of Roanoke as director of purchasing and traffic.

A member of the American Feed Manufacturers Assn., Mr. Saul served five years on its executive traffic committee, and three years on the purchasing agents' committee.

He will serve both the grain division, and the Tuxedo Feeds division of Early & Daniel, co-ordinating receipts and shipments for its three manufacturing plants and four grain elevators.

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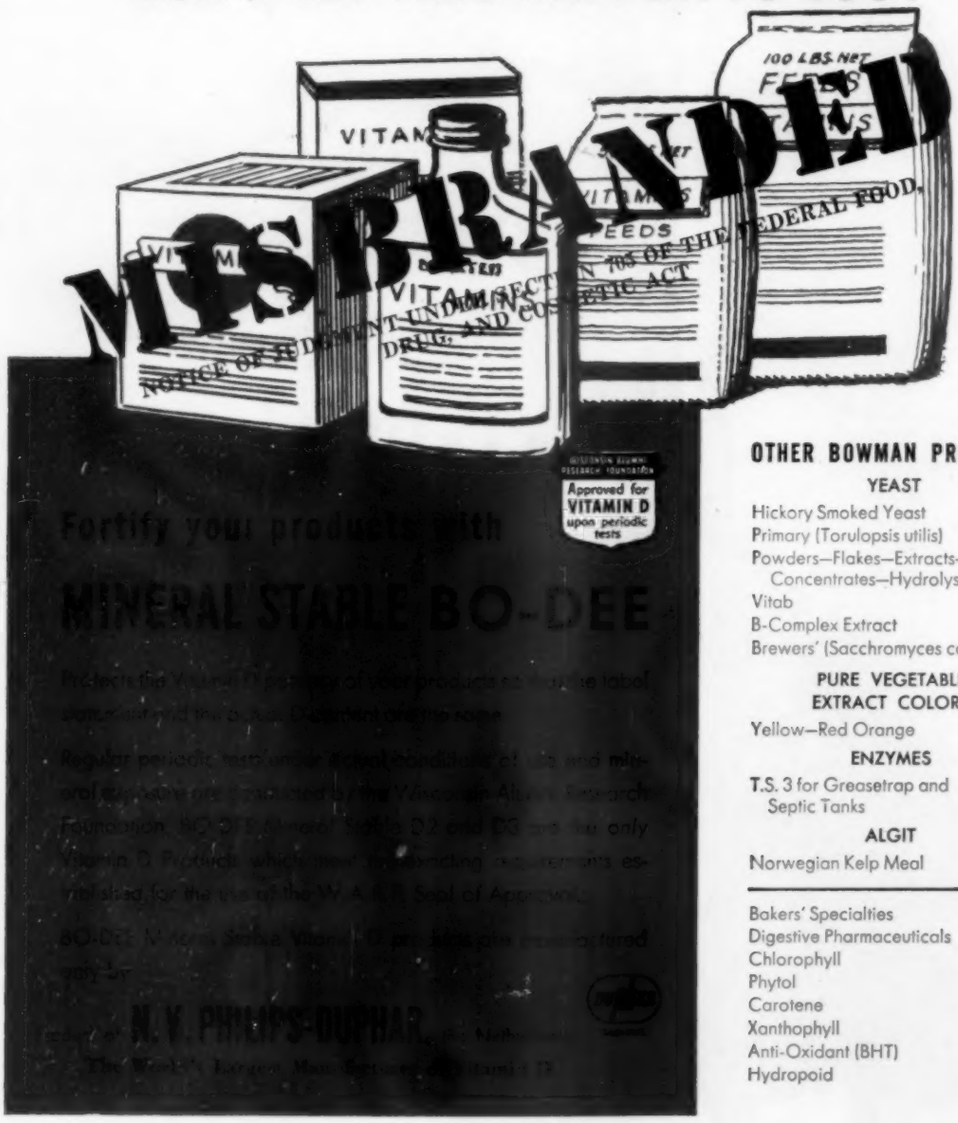
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HIGHLIGHTS

(Continued from page 13)

body weight when fed 3 lb. of a 27% protein ration during the latter part of gestation.

(2) Sows and gilts on alfalfa-ladino clover pasture gained 0.75 and 0.37 lb. per day, respectively, when fed 3.5 lb. of a 27% protein ration during the latter part of gestation.

(3) Sows and gilts receiving the higher energy from 5 lb. of a 16% protein ration had daily gains approximately double those on 3 lb. of a 27% ration.

(4) The differences in energy intake had little consistent effect on number of pigs farrowed and weaned. Sows on the lower level of energy intake farrowed a larger per cent of strong pigs while gilts had a larger per cent of medium pigs than those on the high energy intake.

Discuss Antibiotics

Livestock specialist G. R. Carlisle described several experiments with antibiotics. He explained that earlier studies reported in 1959 suggested that the use of certain antibiotic combinations or newer antibiotics increased rate of gain more than did some of the older antibiotics.

Since 1959, research men have investigated the effects of "old" and "new" antibiotics and an arsenical upon the performance of pigs weaned at two to four weeks of age. Three experiments involving 220 young pigs were conducted.

The control ration consisted of: (1) 33.5% ground yellow corn, (2) 30% rolled oats, (3) 20% dried skim milk, (4) 10% solvent soybean oil meal, and (5) vitamins and minerals.

The antibiotics studied in this experiment included Aureomycin, penicillin-streptomycin, tylosin, bacitracin, arsanilic acid and virginiamycin. Another was a mixture of 32% sulfaquinoxaline, 42% streptomycin and 16% procaine penicillin, henceforth referred to as "SPS."

In one experiment, tylosin was added at the rate of 20 mg. per pound of ration; all other additions were made at the rate of 50 mg. per pound of ration.

Results showed that all antibiotics increased rate of gain over the control ration. And the increase in growth rate reflected increased daily feed consumption. But the antibiotics did not consistently improve feed utilization.

In another study, using the same control ration, workers found that erythromycin thiocyanate added at the rate of 40 mg. per pound of ration markedly depressed feed consumption for the first three weeks of the feeding period. But 20 mg. per pound did not adversely affect feed consumption.

Mr. Carlisle also reported another antibiotic study that used a control ration consisting of: (1) 79.3% ground yellow corn, (2) 18% soybean meal and (3) vitamins and minerals.

Weanling crossbred pigs weighing about 30 lb. were used in the study which compared new antibiotics and combinations of antibiotics.

Following are the antibiotics that increased rate of gain over the controls:

Antibiotics	Gm./ton	Per cent increase in rate of gain over control
		%
Zinc bacitracin	20 gm.	2.1
Chlortetracycline (Aureomycin)	20 gm.	4.1
Zinc bacitracin—chlortetracycline ..	10 gm. & 10 gm.	8.9
Tylosin	20 gm.	7.0
Sulfaquinoxaline—penicillin—Streptomycin	20 gm.	5.5
Oxytetracycline (Terramycin)—zinc bacitracin	10 gm. & 10 gm.	6.6
Oxytetracycline—oleandomycin	20 gm. & 4 gm.	13.3

With the exception of zinc bacitracin, all antibiotics improved feed efficiency or maintained the same level of efficiency as the controls, the specialist reported.

In another phase of this study, adding 0.15% streptomycin fermentation residue to the fortified corn-soybean meal ration increased the rate of gain 10.8% over the controls. And it also improved feed efficiency.

Mr. Carlisle said, "This product should certainly receive further study for its value in practical swine feeding."

European Hog Tour

Describing highlights of a recent tour of European hog farms was Dean Wolf, editor of Farm Journal's Hogcast.

Mr. Wolf led a group of 41 U.S. hog men on a tour last fall. They visited 13 of the best hog farms and five top research centers in Germany, Denmark, Sweden, England and northern Ireland. One farm the group toured finishes 19,000 hogs a year, using the "hot house" method. The owner crowds hogs into tight houses without ventilation, Mr. Wolf

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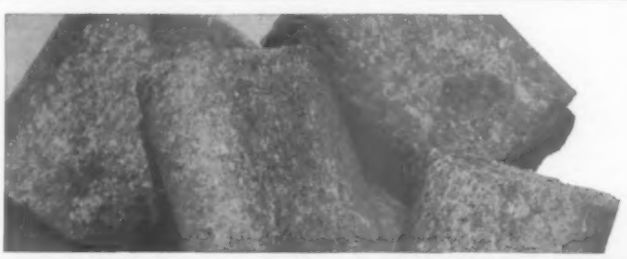

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said. And the pigs literally live in a steam bath. European research men say that hot, humid conditions in the hot house prevent such diseases as pneumonia.

A German farmer they visited raises about 14,000 hogs a year on one farm and finishes out 22,500 hogs on another. On the one farm he averages 80 to 90% conception, 9.8 pigs per litter and 2.3 litters per sow per year and produces 1 lb. of gain on 2.7 lb. of feed, Mr. Wolf reported.

On the other farm he produces five tons of pork per acre, feeding only a combination of silages, such as sugar beets, cooked potato silage and a rye-grass that yields 46 tons per acre when grown in barley harvested for grain.

He also described the experiences of Danish and Swedish farmers in creating a market for pork by producing a top-quality, uniform product tailored to meet consumer preferences.

Ovulation Control

Dr. Philip Dziuk told the persons attending the swine day about work on the "Control of Estrus and Ovulation in Pigs." He said that weaning pigs from all sows at the same time does permit a certain amount of control over the time of heat. Precise control of the time of ovulation in all pigs would permit a producer to make definite plans for breeding, farrowing and raising his pigs, the Illinois researcher said.

He commented that use of artificial insemination in pigs has many advantages although the realization of these benefits may depend to a large extent on how precisely the date of heat can be predicted. Thus, he commented, that if the hog breeder could predetermine the date of heat he could breed all of his gilts in just a few days or possibly in one day instead of having to check each day to determine which ones were in heat and separate and breed them.

A treatment to control heat must be relatively simple to administer and it must produce ovulation of fertilizable ova so that young are produced, he stated.

He commented that daily injections of the hormone progesterone over a period of 14 to 17 days will prevent animals from showing heat and ovulating. Upon withdrawal of treatment, the animals will develop normal ovarian follicles, come to heat and ovulate in four or five days, he said. He noted that development of progesterone-like compounds that are effective when given in the feed have eliminated the inconvenience of daily injections.

Treatment of a group of animals simultaneously causes heat to occur simultaneously in the group, he said. About 21 days later (one estrous cycle) the animals tend to come into heat as a group again. They can be bred at either heat, but it appears that breeding at the second heat gives a better conception rate and larger litter size than breeding at the first heat, he stated.

Estrus control has been attempted in about 500 gilts and sows, he pointed out. Results follow: "Only four have shown heat during treatment and 70% have been in heat four to eight days after treatment. Of 250 treated animals, 85% were bred and 64% farrowed an average of 9.7 pigs per litter. About 90% of comparable animals not treated were bred and 70% farrowed an average of 10.3 pigs per litter."

Dr. Dziuk commented that more recent experimental work on animals killed soon after treatment indicates that greater precision of time of ovulation with normal conception rates and litter size is likely.

High-Moisture Corn

Dr. A. H. Jensen and Dr. D. E. Becker reported on research into use of "High-Moisture Corn for Growing-Finishing Swine." There were two experiments.

In the first, pigs receiving the field-dried corn gained fastest and those on 35% moisture corn gained the slowest. Average daily consumption of the 25, 30 and 35% moisture corn was higher than that of the field dried corn. The increase was not great enough, however, to insure equal intake of dry matter, the two researchers commented.

On the average, feed required for a pound of gain was least on the 14% moisture corn. Pigs on 35% moisture corn consumed the most supplement for a pound of gain. On drylot during an additional 32 day period, pigs receiving the 30 and 35% moisture corn consumed more supplement than the other pigs.

In the second experiment it was found that when mixed in equal dry matter rations, artificially dried corn and 30% moisture corn produced equal rates of gain. It was noted that substituting 30% moisture corn for dried corn on a pound-for-pound basis in a mixed ration lowered the growth rate.

On a dry matter basis the high-moisture corn was utilized equally as well as the dried corn, the two men noted.

When fed free choice with supplement, dried corn produced more rapid and more efficient gains than did high moisture corn. The pigs on high moisture corn ate a greater amount of supplement, they said.

Full-Fat Soybean Meal

Research on "Full-Fat Soybean Meal for Growing-Finishing Swine" was reported by Dr. D. E. Becker, R. H. Rippel and Dr. A. H. Jensen. They said that the study suggests full-fat soybean meal may have possibilities as a feed for swine but that the effects on carcass and its eco-

nomic value will require further study.

The following results were noted:

"During the initial five weeks of the trial (56 to about 115 lb.) on rations containing 16% protein, the pigs fed full-fat soybean meal gained 1.71 lb. per day and required 2.44 lb. of feed per pound of gain. The pigs fed regular soybean meal gained 1.70 lb. per day and required 2.54 lb. of feed per pound of gain. For pigs in this weight range, the 4.0% saving in feed value would indicate that full-fat soybean meal has about 125% of the value of regular soybean meal (50%).

"Pigs fed full-fat soybean meal in a 16% protein ration from 56 to 200 lb. required 12% less feed per pound of gain than other pigs fed regular soybean meal in a recommended feeding program (16% protein to 115 lb. and 12% protein to 200 lb.).

"The slaughter data suggest that feeding full-fat soybean meal to growing-finishing swine may make a fatter carcass as measured by specific gravity and backfat thickness. However, the average percentage of lean cuts did not differ greatly and the highest values were observed when the full-fat soybean meal was fed during the finishing period. Observations indicated that the full-fat soybean meal produced softer carcasses."

Gamma Globulin

On research in use of "Gamma Globulin Injections for Suckling Pigs," Dr. D. E. Becker and Dr. A. H. Jensen reported that for suckling pigs that are performing satisfactorily there is no indication that an injection of porcine gamma globulin has any practical value.

They also noted that injections of porcine gamma globulin did not have any influence on the survival of baby pigs. They pointed out that there was some tendency for the globulin injections to increase the weight gains. In one test group which was performing poorly, they said an increase of 3 lb. in final weight was recorded. However, in the second group the level of performance was reported to be better and the gain response to globulin was slight.

FDA

(Continued from page 10)

spectors whether these directions are being followed. If they are not being followed, we have a regulatory problem to deal with. When we deal with one case a little enforcement generally goes a long way. We haven't jumped on anyone very much, and I can assure you that this is not Russia —as has been sort of implied. This is not that kind of a process, and our enforcement is not just enforcement for enforcement's sake. We're trying to assure safe use, and our requirements are enforced by selective regulatory action, by seizure, by criminal action or by injunction.

Question: A drug, qualified as a new drug, must be proved safe. This is done by the manufacturer's research department. Then, if authorized, this becomes an effective new drug application. To include this in the feed each feed manufacturer must file a supplemental drug application and be advised by FDA that this application is effective. Is this the correct procedure?

Mr. Kirk: Of course, the original application is submitted to us by the manufacturer who has developed all the safety information and production information. Now whether or not each feed manufacturer who desires to use this will have to have a new drug application will depend upon the facts in each case.

There is no iron-clad rule that every NDA for a feed product must call for another NDA by the individual manufacturer. In some cases our people conclude that the product as marketed by the manufacturer, say, as a premix may safely be used without further restriction within the limits set forth on the label, and that doesn't call for an NDA by the feed manufacturer or the feed mill. On the other hand, sometimes as in the case of stilbestrol, for example, it was concluded that we should have an opportunity to check over the equipment set up, the controls, require specific assays at definite times, and in those cases the individual feed mill does have to get an effective NDA before it can go ahead and use the product.

Question: I understand that feed manufacturers can use certified antibiotics without clearance from FDA as long as they are used by themselves and within the prescribed dosages. Is this correct?

Mr. Kneeland: This is correct. There have been issued under the antibotics provisions of the act a series of regulations which specifies the levels of certifiable antibiotics alone or in combination with other drugs which a feed manufacturer may employ to make his own formulas, and if he follows those regulations there's no further clearance required from Food and Drug. The manufacturer is subject, however, to inspection, and subject to having his product sampled to see that he's complying with the terms of these exempting regulations.

Question: We've had a looking-over by FDA but have since had no comment from them. Does this mean we are O.K. or do we get hauled into court tomorrow without any report that we are doing something wrong?

Mr. Kneeland: When an inspector makes a factory inspection he is there to collect information which will be written up and submitted to his superior. If he observes any practices that he can point out as being violative or likely to be violative, he will do so within the realm of his own capabilities, knowledge and experience.

He will, if it's in conection with sanitary matters, leave a written report at the end of his inspection. But there are many things that an inspector will observe and note that he will not be able to evaluate at the time he's at the plant. Those will be the subject of his report and they will be reviewed, and then we may request the collection of samples.

If some weakness in a control program or some other factor is noted, we often don't know whether that firm has violated the law or not until we go out and collect some samples to determine their composition.

So that the fact that an inspector has visited an establishment and you don't hear anything within the next week, 10 days, 2 weeks or 2 months doesn't necessarily mean you are operating satisfactorily or not. We can't undertake to write a note to every firm we inspect and say, "You're not doing just the right thing here." We'll deal with the problem in order of its importance and significance.

If we find a violative condition that warrants regulatory attention by means of a seizure, that action will be taken. There will be no prior warning. On the other hand, a citation notice may be issued to the firm giving them an opportunity to come in and discuss the problem. That may or may not be followed by a prosecution case. That's typical enforcement in all our areas of work and not limited to the feed industry.

Question: Has Food and Drug prepared a regulation booklet for custom mixers?

Mr. Kneeland: No, not as yet. We have such a booklet under consideration. It's been the subject of some preliminary discussion but there isn't such a book available. We recognize the need and value of such a publication. We hope to get one out along with some other things we hope to publish in the interest of better compliance.

Question: The veterinarian prescribed certain drugs, antibiotics, etc. in custom feed mixes. How much time should this feed be in the mixer? Should drugs be premixed first? Is it legal to mix a feed prescribed by a veterinarian in any type of mixer?

Mr. Kneeland: I don't think that anyone sitting on this side of the desk could possibly answer that question. There's no drug named; there's no quantity involved. But I think the basic question that is really presented here is that if a firm doesn't know how to mix ingredients then it ought not to be in the business.

Now, we don't undertake to say that you have to mix a feed for two minutes or four minutes or what kind of a mixer should be used. We're concerned that the feed or rather the drug ingredient be uniformly mixed with the feed so that the final product will do the job and the drug's at the level at which it should be. It's one of our responsibilities to see that once such an operation is done, that the final product is in accordance with whatever regulations may be applicable to the finished product. The fact that a veterinary prescribes it still leaves a responsibility. There's a responsibility on this mixer to know his business and to comply with the law.

Question: What ingredients in feed cause cancer in animals or humans?

Dr. Durbin: Well, the one I'm sure you want to hear us say is diethylstilbestrol, and we will say this: Stilbestrol causes cancer in some laboratory animals. Now there are others that probably cause some suspicion, but we're not prepared to state that there are any others known at this time. We say that there are some that have not been cleared, but stilbestrol is the one that we would say that will cause cancer in some animals.

Question: Anything on arsenicals?

Dr. Durbin: Well, this is under study by a committee right now to decide whether the arsenicals are carcinogens. I don't know how they'll come out. The report is not in as yet.

Mr. Kirk mentioned that I should point out very rapidly that we do not believe that diethylstilbestrol will cause, or have we any reason to believe that diethylstilbestrol will cause, cancer in steers or beef animals. We've had about 6 years' experience with this drug and as yet there has been no indication of an increase in incidence of cancer in steers or beef producing animals.

Question: What has FDA done specifically to make farmers aware of their obligations in using drugs and feeds containing drugs carefully?

Dr. Durbin: We've made a lot of speeches; we've made a lot of mileage; we've gone around and talked to anybody that would listen to us; we've talked to combined meetings of veterinarians, feed dealers, farmers and others. Just about everybody has tried to get information to the farmer, including the feed companies and the state universities, and we've answered thousands of letters to farmers on questions regarding medicated feeds.

It's impossible for us to go out and talk to every one of them. I think the farmer is becoming much more aware of his responsibility in this role, through his practicing veterinarian, his feed dealer and his agricultural extension man.

If anybody has any ideas or suggestions on how we can get closer to the farmer on these problems, we're always glad to hear them.

Question: Proper observation of the withdrawal period by the feeder is a pretty important factor, isn't it?

Dr. Durbin: This is one of the things we have emphasized repeatedly.

On some of my trips to the eastern shore of Maryland the last year or so, I've heard the remark, "Well, Doc, you don't have to worry over here. Every farmer feeding poultry here is withdrawing medication at the proper time. They're scared to death not to."

Now, I don't think this is the proper attitude. I don't think they should be "scared to death not to." They should be doing it because it's the right thing to do.

This thing should not be administered by fear but it should be administered by reason, as we have mentioned, and there are reasons for all of these withdrawal times. They're not something that someone just dreams up.

Question: How much is the enforcement staff of FDA going to be expanded in the next few years? Can't some of this enforcement effort be shared with staffs from various states to eliminate overlapping?

Mr. Kirk: First, I'm sure the question has to do with how many more enforcement people would be checking on feed business, and I don't know. The present appropriations for the Food and Drug Administration provide for a staff of 2,199 people. That counts everybody from the commissioner to the fellow who cleans out the cages in the laboratories. The budget, as presented to the Congress and which is now under consideration by the House Appropriations Committee, is designed to provide for an increase in 301 positions.

Why can't we avoid duplication in the states? We do our very best to avoid any duplication because there is so much to do there's no sense in two folks doing one job together. It must be remembered, however, that currently there are a number of state laws which do not control forage crops. Also, in this medicated feed business the analytical procedures call for some pretty complicated, high-priced equipment and many of the states have not had the opportunity to either get the equipment or the people to use it.

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UNIVERSITY PARK, PA.—A Poultry Sales and Service Short Course will be held at the Pennsylvania State University College of Agriculture here April 25 and 26, according to an announcement by Fred C. Snyder, director of short courses.

One of the features of the two day program will be a panel discussion entitled "Feed Additives: Their Use and Abuse." Moderator will be Dr. Robert F. Gentry, head, poultry disease laboratory, Pennsylvania State University. Panel members will include: Aladar F. Kish, director of nutrition research, Pennsylvania Farm Bureau Cooperative Assn.; Dr. R. F. Seitz, director, Bureau of Animal Industry, Pennsylvania Department of Agriculture; Woodrow Williams, director, nutrition research, Miller & Bushong, Inc., Rohrerstown, Pa., and Dr. Frank Kingsbury, technical service division, Merck & Co., Rahway, N.J.

Other topics included on the program are: "The Why's of Poultry House Ventilation," J. A. McCurdy, agricultural engineering extension, Pennsylvania State University; "Should We Say 'Look Out' for Turkeys and Broilers or 'Outlook'?", Dr. R. L. Baker; "The Egg Outlook from Inside Pennsylvania," A. K. Birth, and "Your Farm Problems Are My Sales Problems," Sam Berenson, president, Chick Sales Egg Farms, Inc., Hanover, Pa.

CSC Announces First Quarter Earnings

BALTIMORE — Commercial Solvents Corp. earnings for the first quarter will be approximately 40¢ per share, about the same as last year, Maynard C. Wheeler, president, said at the annual stockholders' meeting.

Earnings for the year 1961, he commented, should be somewhat higher than 1960's $1.70 per share provided current economic trends continue.

Mr. Wheeler estimated that CSC's 1961 sales of established products in its animal nutrition, agricultural chemical and industrial chemical lines will rise about 5%.

Additional sales increases are anticipated as the result of recent expansions and acquisitions such as the purchase of the Stabilized Vitamins complex of four companies which Commercial Solvents now operates as a company division serving the animal nutrition industry. Mr. Wheeler said that the new division will add some $3 million in sales volume to the 1961 total.

The company's current sales trend, Mr. Wheeler stated, is resulting in profitable business to replace marginal antifreeze operations which were disposed of last year.

"We should see further improvement during 1961 in the return we are getting for our efforts," he said, "In 1958, Commercial Solvents' earnings were a low 2.2% of sales. In 1960, after two years of vigorous company-wide efforts to reduce costs and improve profits, CSC earnings rose sharply to 7.7% of sales. While this is substantial improvement, it is still not good enough. We think we can do better in 1961."

Mr. Wheeler said that so far this year, Commercial Solvents has approved approximately $5 million for capital expenditures and acquisition in 1961. This compares with approximately $3,600,000 for all of 1960. The company plans to spend at least $40 million during the next five years to implement its growth and expansion program, he said.

NEW CALIFORNIA FIRM

OAKDALE, CAL. — The Oakdale Feed & Seed Co. has filed articles of incorporation. Principals in the new corporation are Dan F. Donnelly, Lawrence B. Gilbert and William H. Gilbert. Capitalization was listed at $60,000.

Vice President Named

SAN FRANCISCO — At a special meeting members of the San Francisco Grain Exchange elected Howard Boone, Cargill, Inc., as successor to the late Ed Durr as vice president. Mr. Durr's post on the board of directors is to be filled by R. L. Wilson, Wilson and Beedy.

Mr. Durr, who was general manager of Golden Eagle Milling Co., Petaluma, Cal., died April 1 (Feedstuffs, April 8, page 4).

ACREAGE

(Continued from page 1)

to as high as 80% (Feedstuffs, April 8, page 1).

Secretary of Agriculture Freeman has set 70% compliance as his goal. Government field workers have predicted 75% compliance in Iowa, Missouri and Minnesota.

Observers say most farmers who sell their feed grain are enthusiastic about cutting acreage. But, it has been noted, up to 80% of all feed grain growers feed their grain to livestock on their own farms. Some have been reported as saying only 35% of this latter group will comply.

Production Outlook

While it may be too early to forecast with any certainty feed production in 1961, an average growing season this year probably would result in production somewhat below the record output of 168 million tons in 1960. Again, this prospect does not take into consideration the effect of the feed grain program.

USDA notes that, based on March 1 prospective plantings and 1956-60 yields by states, feed grain production would total 156 million tons, 12 million tons below the record output in 1960.

Carryover of feed grains into 1961-62 is expected to total around 84 million tons, 9 million tons more than in 1960-61. This would add to a total feed grain supply of 240 million tons, about 3 million less than in 1960-61, USDA said.

Should the 1961 acreage of corn be as high as indicated by farmers March 1, a crop of over 4.1 billion bushels would be produced. Carryover of corn next Oct. 1 is expected to exceed 2 billion bushels, an increase of more than 200 million above the 1960 carryover. This would bring the total supply in 1961-62 to over 6.1 billion bushels—at least equal to the 1960-61 supply, USDA reported.

Sorghum Grain

The prospective supply situation for sorghum grain for 1961-62 is like corn's. Should March 1 prospective plantings be realized and allowing for the normal percentage harvested for grain, normal yields would give a crop of around 500 million bushels. Carryover of sorghum grain is expected to increase to around 700 million bushels next Oct. 1. This would add to a supply at least equal to the 1960-61 record of 1.2 billion bushels — unless acreage is reduced further by the 1961 feed grain program.

Oats, Barley

USDA has set the prospective 1961 oat crop at around 1,057 million bushels, about 100 million less than last year. While a larger carryover is in prospect, a crop of this size probably would result in a total supply of around 5% below the 1960-61 supply of 1,435 million bushels.

March 1 intentions indicated a 1961 barley crop of about 407 million bushels, which would be a decrease of 4% from last year. This would produce a slightly smaller supply than in 1960-61.

Protein Feeds

USDA expects supplies of high-protein and other by-product feeds to at least equal or probably exceed the 27.3 million tons estimated for 1960-61. The larger soybean acreage in prospect for 1961, counting on a normal growing season, would result in more soybeans available for processing than in 1960-61.

This would likely mean larger production of soybean meal. However, the quantity of soybean meal available for feeding, USDA notes, would also depend on the demand for oil which would influence the quantity crushed and also the quantity of soybeans and soybean meal exported.

USDA has announced (Feedstuffs, April 8, page 1) that it will require producers to maintain their 1959-60 average acreage of conserving and idle land on the farm in 1961 to be eligible for 1961 price support on soybeans. This stipulation was made, USDA officials said, "to avoid increasing soybean acreage at the expense of acreage now under conservation practices."

Supplies of tankage and meat meal probably will increase in 1961-62 because heavier slaughter of livestock is in prospect.

Livestock Expansion

Perhaps the No. 1 factor behind the anticipated increase in livestock production during 1961 and more livestock on farms in the 1961-62 feeding year is the favorable livestock-feed price ratios which have prevailed.

USDA says much of this increase will be in hogs; farmers are expected to increase their 1961 spring and fall pig crops.

Farmers also are expected to continue heavy feeding of beef cattle during the coming year. The total number of cattle on farms increased slightly during 1960, and the number of beef cattle on grain feed for market was about 6% greater Jan. 1 this year than last. USDA notes that in recent years, there has been a steady increase in cattle numbers, with the number of grain-fed for market rising nearly 30% during the past five years. The number of dairy cows on farms declined about 1% during 1960, but farmers continue to feed their dairy cows at a record rate per head.

Poultry

In the outlook are further increases in poultry production. Broiler production has been increasing during the past year with hatching and egg settings of broiler chicks up about 18% during the past eight weeks over the same period of 1960. This expansion has aroused considerable concern in the intensive broiler production areas of the South.

The number of layers on farms, however, is below a year earlier and probably will continue lower at least through the first half of 1961. More chickens are being raised for flock replacement this year than last, however. This indicates that more layers are likely to be on farms this coming fall and winter than a year earlier.

USDA reports that the total number of livestock on farms in terms of grain-consuming animal units is expected to increase to around 170 million by the 1961-62 feeding year, which would be about 4 million units more than in 1960-61.

PAYMENTS

(Continued from page 1)

which producers may receive feed grain or a cash equivalent of grain."

However, this does not mean that when a farmer signs up for the 20% cut in corn or sorghum acreage, he can immediately obtain a government check for the cash equivalent of his cutback. Information obtained by this reporter indicates that that just isn't so.

The producer is offered the opportunity to sell his half share of the government bonus payment to his country elevator or others who would obtain cash grain at whatever price possible.

But if the producer asks the local ASC committee to obtain cash for him through its marketing machinery—in other words, if he signs up and tenders his bushelage certificate to the local ASC office—he will not obtain cash on the barrelhead. He must wait until such time as CCC accumulates other certificates and then makes sales of grain. It is true, however, that he eventually will obtain a payment reflecting his county support and yield per acre as he has declared.

Since the new administration is intent on making the economic theory in this program work, it is interesting that it is not working on any solid acreage base for individual farmers for the 1959-60 period. The program seems to be "call your number."

Many observe that the grain market is demoralized under the new program. Under previous administrations, industry well knew what might happen in advance of top decisions. The top level decisions were not secret.

Now many processors and others say that the market is demoralized. Actually, it might be said that it is not demoralized—it is now in the hands of the government.

"Will Not Break Market"

Previously this reporter has advised that the new administration would not break the feed grain market this year. One responsible official said this is so, notwithstanding any other statements by front office officials that USDA would dump old crop corn on the market.

Perhaps since this year's report on CCC sales of corn from its stocks reveals that the amount since Oct. 1 is nearly twice that of a year earlier, this may mean that CCC finds some warehousemen unwilling to hold 1959 crop corn under the tight provisions of the Uniform Grain Storage Agreement imposed by the last administration.

It is correct that CCC is now a heavy seller of corn, alleged to be going out of condition. Reports reaching here indicate that some local warehousemen under the new tighter storage agreement are unwilling to hold 1959 crop corn. When that occurs, CCC offices must offer the corn at the market. At this time a country house, if the grain is in the house, may bid on the corn allegedly going out of condition, buy the corn as CCC attempts to consolidate its stocks, and offer it at the market. In some instances, it is reported here, there is top quality corn, and an advantageous sale may be made.

It may be observed that some criticism of the new staff of USDA may not be just a matter of judgment; it may be a problem of not having indications of advance information.

The demoralization of the corn market obviously resulted when an economist voiced his objectives before a Senate committee. However, a more moderate view was expressed to this reporter—an indication that USDA would not dump corn. Ed Jaencke, assistant director of the Commodity Stabilization Service, understood the price violence of another statement, and his comments to this reporter were an attempt to help reconstruct the current corn market.

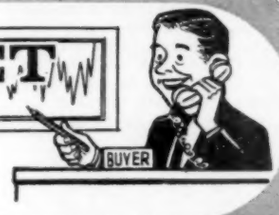
Unfortunately, however, even a sincere statement by a most responsible official cannot restore confidence when higher echelon officials say that they intend to break the market through CCC sales.

This reporter is certain that this is not USDA policy. In fact, Secretary Freeman repudiated the statement when he told a congressional committee that Willard Cochrane, his economic advisor, was not his spokesman.

While USDA has been selling allegedly out-of-condition corn at twice the rate of a year ago, reports indicate that some warehousemen are fearful of the keeping quality of 1959 corn and are notifying CCC to move the corn.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS



NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Memphis: Demand fair; trend lower; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $48.60, re-ground pellets $53.60, both unchanged.

Los Angeles: Demand of dehydrated steady, suncured limited; trend of dehydrated steady, suncured easier; supply of dehydrated adequate, suncured adequate; dehydrated meal, 17% protein, 100,000 A $51@52, unchanged; dehydrated pellet meal, 17% protein, 100,000 A $53@55, unchanged; suncured meal, 15% protein $43@44, down $1; suncured crumbles, 15% protein $45@46, down $1.

Portland: Demand slow; trend barely unchanged; supply ample; 15% suncured $43@44, 20% protein dehydrated pellet meal $72, both sacked.

St. Louis: Demand slow; trend lower; supply ample; dehydrated, 17%, 100,000 A pellets $48, unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A pellets $52@54.

Ft. Worth: Demand improving for dehydrated, slow for suncured; trend lower as new crop offerings increase; supply sufficient; sacked: dehydrated 17% to 20% 100,000 A $52, truck or rail; suncured: 13% ¼-in. grind No. 1 $45, truck; 15% fine ground, dry $47, with 2% fat added $49, rail or truck; all down $1.

Kansas City: Demand slow; trend weaker; supply ample; 17% dehydrated alfalfa, 100,000 A, pellets $45@48, reground pellets $46@49; 15% dehydrated alfalfa, 125,000 A, pellets $46@51, reground pellets $47@52; 20% dehydrated alfalfa, 150,000 A, pellets $49@57, reground pellets $50@58; dehydrated prices unchanged to $1 lower; suncured alfalfa, demand slow, supply ample, 13% pellets $32@34, No. 1 ¼-in. $38, sacked, unchanged.

Minneapolis: Market remains steady; 17% dehydrated, 100,000 units vitamin A reground pellets $51, delivered Minneapolis; oiled reground pellets $53.

Chicago: Demand light; trend down 50¢; supply adequate; 17% protein, dehydrated, 100,000 units vitamin A $49@50.50.

Buffalo: Demand fair to poor; trend steady to lower; supply adequate; $64.10, sacked, Boston, unchanged.

Denver: Demand fair; trend steady; supply ample; $46.

Seattle: Demand fair; trend easy; supply good; 15% protein suncured $51, 150,000 A unit dehydrated $72, both delivered truck loads, sacked.

ANIMAL FAT (STABILIZED)

Memphis: Demand fair; trend upward; supply barely adequate; yellow grease 7½¢ lb., unchanged; prime tallow 8¼¢ lb., up ⅛¢.

St. Louis: Demand good; trend firmer; supply adequate; 7¾¢ lb., delivered, tank trucks or cars, up ¼¢.

Ft. Worth: Demand excellent; trend higher; supply tight; prime tallow, tank cars 8@8¼¢ lb., drums 9⅛@9½¢ lb., f.o.b. north Texas packing plants with returnable drums, unchanged.

Los Angeles: Demand slow; trend steady; supply adequate; 8¢ lb.

Kansas City: Demand good; trend firm; supply tight; stabilized prime tallow 8⅛¢ lb., up ⅛¢.

Chicago: Demand good; trend unchanged to 25¢ lower; supply moderate; tank truck or carlots, bleachable fancy tallow $8.12½ cwt., yellow grease $7.12½ cwt.

St. Paul: Sharp rise leveled off at 8¢ lb., f.o.b. producer's plant, for bleachable fancy; demand good; supply ample.

Atlanta: Demand good; trend strong; supply short; 7¾@7¾¢ lb., f.o.b. Alabama and Georgia processing plants.

BARLEY FEED

Los Angeles: Demand slow; trend steady; supply limited but adequate; $2.52½ cwt.

Chicago: Demand fair; trend unchanged; supply light; $36, sacked, May shipment.

Baltimore: Demand fair; supply light; trend unchanged; $46.50, sacked, May shipment.

Denver: Demand fair; trend steady; supply ample; $2 bulk, $2.30 sacked.

Seattle: Demand fair; trend steady; supply good; $45, truck lots.

BLOOD MEAL

Los Angeles: Demand slow; trend unchanged; supply adequate; $6.50 a unit of ammonia, sacked, unchanged.

Chicago: Demand and supply fair; trend unchanged; 80% protein $122.50, sacked.

Buffalo: Demand light; supply ample; $140, unchanged.

BONE MEAL (STEAMED)

Cincinnati: Demand good; trend stronger; supply fair; $90, sacked, Cincinnati, down $5.

Los Angeles: Demand fair; trend steady; supply ample; imported $80.75, 20 ton lots, sacked, unchanged.

Ft. Worth: Demand fair; supply sufficient; domestic $100, sacked, f.o.b. Ft. Worth, unchanged.

Chicago: Demand slow; supply ample; trend unchanged; $95, sacked.

Denver: Demand good; trend steady; supply ample; $80, West Coast.

Buffalo: Demand and supply fair; trend steady; $105, sacked, unchanged.

Seattle: Demand fair; trend steady; supply good; $92, sacked, f.o.b. car Seattle.

BREWERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; $40.

Los Angeles: Demand good; trend steady; supply limited; $51, unchanged.

St. Louis: Demand draggy; trend lower; supply ample; $36, unchanged.

Ft. Worth: Demand slow; trend steady; supply sufficient; 26% protein $53.90, sacked, unchanged.

Chicago: Demand slow; trend unchanged to 50¢ lower; supply good; 26% protein $30.50@31.

Buffalo: Demand fair; trend steady to lower; supply adequate; $43, Boston, off 50¢.

BREWERS DRIED YEAST

Los Angeles: Demand good; trend steady; supply limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

Cincinnati: 9@10¢ lb., sacked, down 1@1½¢ lb.

Ft. Worth: Demand slow; trend steady; supply sufficient; 11½¢ lb., 5 ton lots, sacked, unchanged.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12¼¢ lb., l.c.l.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Buffalo: Demand fair; trend steady; supply ample; spray $3.75 cwt.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

CALCIUM CARBONATE

Los Angeles: Demand fair; trend steady; supply adequate; flour $9.85, 20 ton cars; meal $10.20, 20 ton cars; both sacked and unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Ft. Worth: Demand normal; trend steady; supply sufficient; $4.50@5, f.o.b. north Texas.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.

Denver: Demand fair; trend steady; supply ample; $14.50.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

COCONUT OIL MEAL

Los Angeles: Demand moderate; trend unchanged; supply adequate; copra cake $63, unchanged.

Portland: Demand fair; trend steady; supply adequate; 20% solvent $62.20.

Seattle: Demand fair; trend firm; supply tight; solvent type $71, f.o.b. car Seattle, sacked.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; trend steady; supply limited; 3¢ lb., unchanged.

Ft. Worth: Demand slow; trend steady; supply very scarce; tank car, West Coast production $4.16 cwt.; dried fish solubles $146.60; both unchanged.

Denver: Demand fair; trend steady; supply ample; 3¢ lb., West Coast.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)

Minneapolis: Feed $45.70, meal $76.70.
Atlanta: Feed $49.10, meal $80.10.
Birmingham: Feed $46.90, meal $77.90.
Boston: Feed $50.60, meal $81.60
Chicago: Feed $39, meal $70.
Cleveland: Feed $47, meal $78.
Denver: Feed $49.30, meal $80.30.
Ft. Worth: Feed $47.80, meal $78.80.
Indianapolis: Feed $44.25, meal $75.25.
Kansas City: Feed $39, meal $70.
Louisville: Feed $45.55, meal $76.55.
New York: Feed $50.20, meal $81.20.
New Orleans: Feed $49, meal $80.
Norfolk: Feed $49.60, meal $80.60.
Philadelphia: Feed $49.80, meal $80.80.
St. Louis: Feed $39, meal $70.

COTTONSEED OIL MEAL

Portland: Demand improving; trend higher; supply tighter; 41% solvent $72.20.

Memphis: Demand fair; trend higher; supply ample; prime 41% protein, old process $55; new process, 41% protein $55; both up $3.

St. Louis: Demand good; trend higher; supply ample; solvent $56, Memphis, unchanged.

Cincinnati: Demand fair; trend higher; supply adequate; $64.50, up $4.

Los Angeles: Demand good; trend firmer; supply ample; $57, up $2.

Ft. Worth: Demand very slow; trend easy, especially for immediate shipment; supply adequate; 41% old process $57@58, f.o.b. mills Ft. Worth, unchanged to $1 lower; carlots, solvent, 2% fat added $56.60, delivered Ft. Worth; pellets $2 additional; hulls $12.50@13.50, down $2.

Kansas City: Demand good; trend stronger; supply adquate; 41% old process $63.70, up $5; 41% solvent process $61.80, up $2.50.

Atlanta: Demand good; trend stronger; supply limited; 41% $61 Georgia, $57 N. Alabama, Mississippi and Tennessee producing mills.

Seattle: Demand good; trend firm; supply ample; $69, f.o.b. car Seattle.

Buffalo: Demand and supply fair; trend higher; $77.75, sacked, Boston, up $3.75.

Denver: Demand fair; trend steady; supply ample; 41% $60.50, West Coast.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50 sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $55, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18% $61 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).

Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 14% phosphorus, carlots $62.50, ton lots $72.50, f.o.b. Cincinnati.

Ft. Worth: Demand fair; trend steady; supply sufficient; minimum 18½% phosphorus, maximum 31% calcium, maximum .18% fluorine, $76.65, sacked.

Seattle: Demand and supply good; trend steady; $93, sacked, ex-dock Seattle.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $36, bagged, in less than carload lots; 21% P, $94.05, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk, carlots and truck loads, 18½% phosphate $78 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices per ton, f.o.b. Chicago Heights, Ill. or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $81 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $81, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $75.50, sacked in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

Seattle: Demand good; trend steady; supply limited; $91, ex-dock Seattle, sacked.

Los Angeles: Demand fair; trend steady; supply adequate; 18½% phosphorus $95.10, sacked.

Cincinnati: 18½% phosphorus $88.80, bagged in carloads; $98.70, bagged in ton lots, f.o.b. Cincinnati; $81, f.o.b. producing points.

Ft. Worth: Demand good; trend steady; supply adequate; $81.50, sacked, unchanged.

Buffalo: Demand and supply good; trend steady; $82.93, sacked, Boston, unchanged.

Denver: Demand fair; trend steady; supply plentiful; $88, delivered carload.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; $56@57.

Buffalo: Demand and supply fair; trend lower; $61, Boston, off $3.

Seattle: Demand good; trend firm; none available; $71, sacked, delivered truck lots.

DRIED BEET PULP

Los Angeles: $44.90@45, down $5@5.20, new crop basis.

Portland: Demand slow; supply ample; trend unchanged; $47.58, sacked.

Buffalo: Demand and supply fair; trend steady; $64, sacked, Boston, up 50¢.

Denver: Demand fair; trend steady; supply ample; $65.

Seattle: Demand good; trend steady; supply ample; $69, delivered carlots, sacked.

Atlanta: Demand fair; trend steady; nothing offered; $62.50, sacked, delivered from inventory.

DRIED BUTTERMILK

Los Angeles: Demand fair; trend steady; supply ample; 13¾@14¢ lb., sacked, unchanged.

Chicago: Demand slow; supply ample; trend unchanged; medium acid $9.50@10 cwt., sweet cream $9.50@10 cwt., both sacked.

Buffalo: Demand poor; trend steady; supply ample; $10.55 cwt.

DRIED CITRUS PULP

Los Angeles: Demand good; trend steady; supply light; orange pulp $43, lemon pulp $5, both nominal and unchanged.

Atlanta: Demand fair; trend weak; supply heavy; pulp $32.50@35, sacked; meal $30, sacked; both f.o.b. Florida processing plants.

Buffalo: Demand poor; trend steady; supply adequate; $35, sacked, Florida points, unchanged.

DRIED SKIM MILK

Los Angeles: Demand slow; trend steady; supply adequate; 14¢ lb., less than ton lots; 13¾¢ lb., ton lots; both sacked and unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

Chicago: Demand fair; supply adequate; trend unchanged; $10.50@10.85 cwt., sacked.

Minneapolis: Unchanged at $12@12.25 cwt.

Buffalo: Demand good; trend steady; supply ample; $11.35 cwt., off 15¢.

DRIED WHEY

Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.

Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked and unchanged.

Ft. Worth: Demand fair; trend steady; supply adequate; carlots, standard $5 cwt., sacked, delivered Ft. Worth; ton lots $5.25 cwt., f.o.b. warehouse Ft. Worth, unchanged.

Kansas City: Demand good; trend steady; supply adequate; $5 cwt., sacked, unchanged.

Chicago: Demand light; supply ample; trend unchanged; $4.50@4.85 cwt., sacked.

Minneapolis: Supply ample; demand good; price steady at $5.15 cwt.

Denver: Demand fair; trend steady; supply ample; $5.75 cwt.

Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand good; trend steady; supply limited; $1 a unit protein, sacked, unchanged.

Ft. Worth: Demand fair; trend higher; supply limited; 85% protein $75, sacked, truck lots, up $5.

Atlanta: Demand good; trend very firm; supply short; $70, f.o.b. Alabama and Georgia processing plants.

FISH MEAL

Cincinnati: Demand fair; trend higher; supply adequate; $106.10, up $3.

Portland: Demand fair; trend firm; supply tight; $1.70@1.75 a protein unit, sacked.

Los Angeles: Demand and trend steady; supply light; local production, 60% protein $1.80 a unit, sacked, unchanged.

Ft. Worth: Demand good; trend higher; offerings light; sacked: 65% protein, Peruvian, nominal $107, up $4; 60% protein, menhaden $112, delivered Ft. Worth, up $1.

Chicago: Demand fair; trend nominally steady; supply very light; sacked: menhaden, East Coast $98@103, Gulf $98@103; menhaden scrap, East Coast $94@99, Gulf $94@99; Canadian herring meal $1.60 a unit of protein.

Minneapolis: Demand good; supply adequate; trend strong; 60% West Coast blended up $2 from week earlier to $135, sacked, delivered; 70% Canadian herring up 5¢ a unit in week to $1.57½, f.o.b. West Coast, subject to production.

Atlanta: Demand good; trend steady; supply limited; 60% menhaden $103@105, Atlantic and Gulf ports, subject to catch.

Seattle: Demand good; trend firm; supply ample; $1.60 a unit protein, f.o.b. truck, Vancouver, B.C., Canadian production.

Buffalo: Demand fair; trend higher; supply very light; 60% protein menhaden $112.50 bulk, $117.50 sacked, unchanged.

Denver: Demand fair; trend steady; supply ample; $1.75 a protein unit, West Coast.

HOMINY FEED

Los Angeles: Hominy meal $50; hominy pellets $52.

St. Louis: Demand fair; trend easy; supply ample; yellow $34, down $4.

Cincinnati: Demand fair; trend lower; supply adequate; $36.50, down $3.

Kansas City: Demand poor; trend weak; supply ample; white or yellow $31@32, down $1.

Chicago: Demand moderate; trend down 50¢@$1; supply good; no quotations.

LINSEED OIL MEAL

Cincinnati: Demand poor; trend steady; supply adequate; new process $53.50, old process $58.50, Minneapolis; old process down $1.50.

Portland: Demand dull; trend lower; supply ample; 34% solvent $54, sacked.

Los Angeles: Demand moderate; trend unchanged; supply adequate; local production 31% protein $71, unchanged.

Ft. Worth: Demand slow; trend steady; supply sufficient; 34% protein, extracted $70.20@70.70, April, unchanged.

Chicago: Demand good; trend up 50¢@$1; supply moderate; Minneapolis basis; solvent $54@54.50, expeller $58@59.50.

Minneapolis: Market $1 stronger compared with week ago; 34% solvent $53.50, April 13; 32% expeller $60.

Seattle: Demand fair; trend steady; supply good; 34% protein (Montana) $85, delivered carloads, sacked.

Buffalo: Demand and supply fair; trend steady to higher; $53.50, Minneapolis, up 50¢.

Denver: Demand fair; trend steady; supply ample; $67.50.

MEAT AND BONE MEAL

Los Angeles: Demand and trend steady; supply limited; 50% protein $1.85@1.90 a unit, unchanged.

Memphis: Demand good; trend up; supply low; 50% protein $55, without billing, up $4; 50% protein $90, with rail transit, up $5.50.

Cincinnati: Demand excellent; supply fair; trend stronger; 50% meat and bone scraps $85, Cincinnati, up $6.50.

Portland: Demand good; trend firm; supply tight; 50% $102.50@105, sacked.

St. Louis: Demand good; trend firm; supply limited; 50% $85, up $4.

Ft. Worth: Demand good; trend steady; supply limited; meat and bone, 50% $82.50 bulk, $85 sacked, f.o.b. Ft. Worth, unchanged.

Kansas City: Demand good; trend firm; supply tight; 50% $90, up $2.50.

Minneapolis: Supplies adequate; demand good; trend stronger; gain of $6@8 in week to $94@98, sacked.

Buffalo: Demand fair; trend firmer; supply light; $90 bulk, $95 sacked, up $5.

Seattle: Demand good; trend strong; supply limited; $2 a unit protein, ex-processing plant, sacked.

Denver: Demand fair; trend steady; supply ample; $89.

MEXICAN PHOSPHATE

Brownsville, Texas: Mexican natural ground rock, 13% phosphorus $39 sacked, bulk $2 less; 14% $43 sacked, bulk $2 less.

MILLFEED

Minneapolis: Dips in millruns have reduced supplies, while demand shows signs of improvement; trend is upward; sacked bran up $2@2.50 to $41, bulk $5 less; sacked middlings up $3.50 to $41, bulk $3 less; sacked red dog up $1 to $44.

Kansas City: Demand fair; trend firm; supply, sacked tight, bulk ample; sacked bran $37@37.50, up $2; bulk bran $31@31.50, up $1.50; sacked shorts $37@37.50, up $2; bulk shorts $32@32.50, up $1.50; bulk middlings $32@32.50, up $1.50.

Ft. Worth: Demand fair; trend strong; offerings light on sacked, but adequate on bulk; bran, bulk $39, burlaps $44.50; gray shorts, bulk $40, burlaps $45; bulk middlings $39.50, delivered Texas common points; 50¢ up on bulk bran, shorts and middlings; $1.50 up on sacked bran and shorts.

Chicago: Demand fair; trend up $1@2; supply ample; standard bran $37.50, standard midds. $38.50, red dog $40.50.

St. Louis: Demand good; trend firm; supply ample; sacked, bran $41.50, shorts $41.50, up $2; bulk bran $35, up 50¢; bulk middlings $36, up $1.

Cincinnati: Demand poor; trend higher; supply adequate; bran and middlings $42.50, up $1.50.

Buffalo: Demand and supply fair; trend steady to higher; red dog $41.50, f.o.b. Buffalo, up 50¢; middlings $39.50, up 50¢; bran $37.50@38.50, unchanged.

Memphis: Demand poor; trend steady; supply ample; wheat bran $37.80, gray shorts $38.80, standard midds. $38.80, all up $1.50.

Seattle: Demand good; trend firm; supply ample; $39, delivered common transit points, carlots.

Portland: Demand slow; trend steady; supply tight; $37.50@38.50.

Denver: Demand fair; trend lower; supply ample; shorts $38, bran $38, millrun $38.

Los Angeles: Standard millrun demand steady, trend steady, supply limited $42.50@43, unchanged; red bran demand slow, trend firmer, supply ample $50, up $1@2.

MOLASSES

Kansas City: Demand good; trend firm; supply tight; blackstrap 14¢ gal., f.o.b. New Orleans, up ¼¢.

Los Angeles: Demand good; trend steady; supply limited; $25.50, f.o.b. tank cars; $25.75, f.o.b. tank trucks; both unchanged.

Memphis: Demand poor to fair; trend steady; supply ample; blackstrap 13½@14¢ gal., tank car, f.o.b. New Orleans, up ½¢; $31 ton delivered Memphis, truck, up $1.

St. Louis: Demand slow; trend steady; supply ample; 13½¢ gal., tank car, New Orleans, unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; 13¾¢ gal., New Orleans.

Ft. Worth: Demand fair; trend strong; supply sufficient; blackstrap 14¼¢ gal., f.o.b. Houston; truck $31.07, delivered Ft. Worth, seller's market price on date of shipment; up ¼¢ gal.

Minneapolis: Stronger market; prices higher; blackstrap $35, tank truck, delivered; beet $31, blend $33.

Atlanta: Demand fair; trend steady; supply ample; citrus $18@21, f.o.b. Florida processing plants.

Seattle: Demand and supply good; trend firm; $25.75, f.o.b. Seattle tank truck lots.

Buffalo: Demand fair to good; supply fair; trend steady; 16½¢ gal., f.o.b. Albany, unchanged.

Denver: Demand fair; trend steady; supply ample; $33.60.

OAT PRODUCTS

Kansas City: Demand fair; trend steady; supply ample; oat mill by-product $14@15, sacked, unchanged; feeding rolled oats $67@70, sacked, unchanged.

St. Louis: Demand slow; trend firm; supply ample; white pulverized $41, up 50¢; reground oat feed $12, up $1.

Cincinnati: Demand poor; trend higher; supply adequate; pulverized white oats $44@50, up $2@3.

Ft. Worth: Demand slow; trend steady; supply sufficient; 10% protein oat millfeed $41.80, reground $21.30, sacked, unchanged.

Chicago: Demand and supply fair; trend unchanged; reground oat feed $12; No. 1 fine ground feeding oatmeal $65; feeding rolled oats $69.

Minneapolis: Market on stronger side; sacked feeding rolled $70; sacked feeding oatmeal $61; sacked pulverized $41; sacked crimped $58; sacked oat feed $20.

Seattle: Demand and supply fair; trend steady; oat feed $57, delivered truck lots, 38 lb. or better.

PEANUT OIL MEAL

Los Angeles: Demand good; trend steady; supply limited; $80.50, sacked, truck.

Atlanta: Demand good; trend stronger; supply very limited; 45% $53.50 for solvent, f.o.b. Alabama producing mills.

POULTRY BY-PRODUCTS

Memphis: Demand good; trend strong; supply inadequate; 55% meal $90, sacked, nominal, up $1.50.

Los Angeles: Demand good; trend easier; supply limited; $1.60 a unit of protein, sacked, down 5¢.

Ft. Worth: Demand good; trend steady; supply very scarce; $87.50, sacked, f.o.b. north Texas plant, unchanged.

Atlanta: Demand good; trend stronger; supply sold out for April; meat meal $87, f.o.b. Alabama and Georgia processing plants.

RICE BY-PRODUCTS

Memphis: Demand slow; trend steady; supply ample; bran $29, f.o.b. Arkansas points, unchanged.

(Turn to QUOTES, page 103)

Here's What Happened This Week in Ingredient Markets

Improving formula feed business contributed generously this week to a swift change in the tone of ingredient price trends. The uncertainty of just what the provisions of the new government feed grain program mean for a couple of weeks had a dulling effect on markets, but this week the general trend was pointed in the opposite direction.

A bullish bean market and renewed demand from feed manufacturers pushed soybean meal prices upward sharply. And most other major ingredients followed the trend.

The accompanying table of average bulk price changes from April 4 to April 11 shows how the ingredient markets have improved. However, this tabulation does not show the further price advances which have occurred since April 11. Soybean meal apparently is stronger than the table indicates, and recent developments have strengthened the millfeeds market.

A roundup of ingredient market developments during the week ended April 13 follows:

Major Markets Roundup

MINNEAPOLIS-ST. PAUL: Wheat millfeed mill grind was lighter again this week, and millfeed values gained. The U.S. Department of Agriculture said U.S. production dropped to 84,400 tons this week compared with 91,800 tons last week and 90,700 tons a year earlier.

USDA quoted bran April 12 at $34.50 ton, bulk basis, Minneapolis; bulk middlings, $33.

Near the close of the week, the Farm Stocks Report showed bean stocks in that position at 72.5 million bushels, only about half as much as was farm-stored April 1, 1960. This news apparently prompted additional buying and the market moved up the limit April 12.

At the close April 12 44% soybean meal was quoted at $69@79 ton, bulk, Decatur, for delivery to Minneapolis. USDA market observers pegged 50% meal at $74 ton, bulk, Decatur.

USDA said linseed meal prices were not changed noticeably, but some dealers felt that the soybean market had advanced "to a point where more and more mixers will turn to other proteins to replace soybean meal." The April 12 quote for 34% extracted linseed meal was $53.50 ton; 32% $58.50.

The animal protein feed market advanced, largely because of strength in soybean meal.

PORTLAND: Feed ingredient quotations appeared unsettled at the close of this week's trading throughout the Pacific Northwest. Quotations averaged stronger on April 11 after soybean meal prices advanced sharply by $7.50@8.50 ton under the strong influence of raw soybean markets.

Cottonseed meal values gained $3 ton as a reflection of the soybean meal jump and there were indications of firmer holding actions and higher asking prices for other protein feeds as a result of these advances.

Wheat millfeeds, alfalfa meal and other major feed ingredients held within previous ranges during limited trading.

Quotations for feed grains averaged lower after declines of 50¢ ton for corn and barley quotations that were unchanged to 50¢ lower. Milo quotations gained 50¢ during the period.

FORT WORTH: Prices on feed ingredients were mostly steady the past week with a few notable exceptions, the chief of which was soybean meal which was up $8@9.50 ton.

Offerings of feather meal were very light and only available in small lots at about $5 higher than last week; fish meal was $1@4 higher, and tankage was up $2.50. Millfeed was up 50¢ in bulk, but $1.50 higher sacked as the offerings were lighter. Animal fat, stabilized, advanced 3/8¢ lb. and blackstrap molasses ½¢ gal.

Only a few ingredients were lower but as new crop offerings of alfalfa meal increased, the quotations were about $1 lower. Rice bran was off $2, and cottonseed meal was unchanged to $1 down, while cottonseed hulls were down $2.

CINCINNATI: Feed ingredient brokers reported increases—some of them quite substantial—for seven ingredients during the week ended April 12, while lower prices were quoted for only three mixers.

Price advances included: Cottonseed oil meal, $4; fish meal, $3; meat and bone meal, $6.50; millfeed, $1.50; oat products, $2@3; soybean oil meal, $7@9, and tankage, $4.

Price reductions: Bone meal, $5; brewers dried yeast, 1½¢, and hominy feed, $3.

Some of the price increases were attributed to market speculation that may bring equally sharp price reductions during the coming weeks.

ST. LOUIS: Feed ingredients are firm to sharply higher, with high protein ingredients showing the greatest gains.

Soybean meal soared following the upturn in the futures market for beans and meal. Traders are of the opinion that a tight situation is in the making as the government report shows farm stocks of soybeans on April 1 are only about half the stocks of a year ago and the lowest for this date since 1956.

Cottonseed meal and animal proteins are firm and higher and appear to be absorbing additional strength from soybean meal. Millfeeds made small gains during the week, mostly because production is light and supplies tightly held. Feed grains are under pressure of steady selling of government owned stocks.

ATLANTA: Heavy buying interest in both cottonseed meal and soybean meal this past week has caused prices to advance $4-5 ton. Feed manufacturers have come into the market bidding on straight run peanut meal to be used in the place of soybean meal, causing prices to advance $2-3 ton while cleaning out the present available supplies of peanut meal which was a drug on the market last week.

Demand for citrus pulp continues on the slow side and many look for a $2.50 drop in the market next week. Some processors already have decreased their prices by this amount. Prices are ranging from $32.50 to $35 ton, sacked, f.o.b. Florida producing mills.

MEMPHIS: Demand was good and prices higher for ingredients here the past week.

Proteins moved upward, influenced by strength in the soybean market. Also the cash soybean oil meal market developed better business as the result of bigger broiler production, and cottonseed oil meal advanced in sympathy.

Only two mills in Memphis are still running soybean oil meal, and supplies are limited. This also contributed to the upturn in cash prices.

Export Demand

The export demand was said to be active for good quality greases, causing prices to advance. Some feed mills reportedly were resisting the asking quotations.

During the past 10 days, business

Feeds: Average Bulk Prices and Index of Weighted Prices*
(dollars per ton)

	April 11, 1961	April 4, 1961	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	80.95	76.25	+4.70
Cottonseed meal	58.30	56.90	+1.40
Linseed meal	63.15	63.20	— .05
Copra cake or meal	57.50	57.50	...
Peanut meal	52.50	53.00	— .50
Index	95.5	91.1	+4.4
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	85.75	84.05	+1.70
Tankage	84.40	83.90	+ .50
Fish meal	103.50	103.50	...
Index	77.2	76.2	+1.0
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	50.55	49.75	+ .80
Dist. dried grains	55.70	57.20	—1.50
Brewers dried grains	40.45	42.90	—2.45
Index	78.3	78.3	...
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	39.50	38.65	+ .85
Midds. and shorts	39.40	37.90	+1.50
Index	71.3	69.1	+2.2
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	37.60	38.60	—1.00
Rice bran	29.50	30.00	— .50
Index	58.6	60.0	—1.4
ALFALFA MEAL			
Prices at prin. mkts.	51.40	51.35	+ .05
Index	98.9	98.8	+ .1
MOLASSES, FEEDING			
Prices at prin. mkts.	27.28	27.28	...
Index	81.2	81.2	...
ALL FEEDSTUFFS			
Index	85.2	82.5	+2.7
FEED GRAINS			
Prices at prin. mkts.:			
Corn	36.50	36.40	+ .10
Oats	42.60	42.70	— .10
Barley	41.40	41.40	...
Grain sorghums	36.00	35.80	+ .20
Index	59.9	59.7	+ .2

*Base period of index is 1947-49.
Source: USDA.

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improved here for meat scraps. This was attributed to the rapid advance of 50% soybean oil meal and light supplies.

With the chicken kill small at present, supplies are inadequate in poultry by-products. A broker said this condition is expected to last several weeks.

Oilseed Meal Futures

Oilseed meal futures made one of their best price jumps in many months on the Memphis Board of Trade during the past week.

Unrestricted soybean oil meal closed April 11 $1.50@8.25 ton higher than on April 4. Eastern Trunk Line soybean oil meal closed $6 higher, and bulk solvent cottonseed oil meal closed $1@4 higher.

Eastern Trunk Line soybean oil meal contracts advanced the limit of $4 April 11.

The rise developed from a very strong soybean market, particularly at the close of the period, and improved cash oilseed meal business.

Trading volume for the week amounted to 2,900 tons of unrestricted soybean oil meal.

BUFFALO: Ingredient prices moved in all directions last week. Corn gained 1¢ as buying by the big grain merchandisers subsided. Oats and barley were unchanged.

Proteins took the spotlight, with soybeans making a spectacular play. Soybean oil meal (44%) jumped $9 and 50% soy skyrocketed $10.50. Cottonseed oil meal advanced $3.75. Linseed oil meal dragged a bit but it attracted more tonnage and edged up 50¢.

Meat scraps rallied $5 on strength in soybeans, and fish meal held firm.

Hominy feed declined $1 and distillers' grains were off $3. Brewers' grains attracted a little more attention and were off 50¢. Alfalfa meal held steady.

Trading in millfeeds was on an if-and-when-needed basis, with nobody wanting to buy "beyond the end of his nose." The end of the dairy season is approaching and prices of millfeeds in some instances are above other ingredients. Bulk bran was unchanged. Bulk middlings and red dog were up 50¢.

Other Reports

MOLASSES: Markets for feeding cane molasses strengthened in the southern and midwestern states during the week, the U.S. Department of Agriculture reported from New Orleans.

Higher cost of molasses to distributors was the main reason given for the upturn. Demand from users remained seasonally moderate to slow.

Prices advanced at New Orleans about ½¢ to mostly 13.5¢ gal.

Corn molasses (hydrol) strengthened at Chicago partly because of the impact of higher prices from the Kansas City area and partly because of the advancing blackstrap market, USDA said. Corn molasses prices at Chicago were unchanged to $1 ton higher.

USDA said Puerto Rican producers have sold an additional 4 million gallons of 1961 crop blackstrap to local users and distributors. Prices paid were 11.5@12.5¢ gal., f.o.b. Puerto Rican ports.

ANIMAL FAT: It was reported from New York this week that exports to Russia have contributed to higher tallow prices. Bleachable tallow, a key grade, has climbed 2¢ lb. since early February, when the Soviets entered the market. This item is now bringing 8½¢ lb. in New York, the highest price in nearly three years. Observers said the Russians have already bought 200 million pounds and are shopping for more.

FISH MEAL: The Peruvian National Fisheries Society has reported that export prices for fish meal (65-67% protein) during February were in a range of about $68 ton, an increase of about 2.8% over the January average of nearly $65 ton.

CORN GLUTEN: Major processors advanced the price of corn gluten meal $2 ton April 11. Gluten feed remained unchanged.

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QUOTES

(Continued from page 101)

Los Angeles: Demand and supply limited; trend easier; California production, high fat content, bran $50, sacked, down $2.50.
Ft. Worth: Demand fair; trend lower; supply sufficient; rice bran $32@33, f.o.b. south Texas rice mills, sacked, down $2; hulls $5, sacked, unchanged.
Buffalo: Demand fair; trend little weaker; supply ample; bran $56.60, unchanged.
Atlanta: Demand fair; trend steady; supply good; bran $43, sacked, delivered.

SCREENINGS

Los Angeles: Ground $35, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; unground grain screenings $15@16, Cincinnati.
Chicago: Demand quiet; supply ample; trend unchanged; ground grain $31.50; Canadian $26, sacked.
Buffalo: Demand fair; trend steady; supply adequate; ground, sacked $30.75, New York, lake and rail; bulk, unground $25.50, unchanged.

SOFT PHOSPHATE
(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $35.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.61.
St. Louis: $24.32.

SOYBEAN OIL MEAL

Kansas City: Demand fair; trend strong; supply tight; 44% solvent process $73@73.50, Decatur, up $7.
Memphis: Demand good; trend higher; supply limited; prime 44% solvent $72, f.o.b. Memphis, up $6.
St. Louis: Demand good; trend firmer; supply ample; 44% $75.50, up $7.50; 50% $82, up $8; both Decatur.
Cincinnati: Demand poor; trend higher; supply adequate; $74@76, Decatur, up $7@9.
Portland: Demand fair; trend strong; supply tight; $97.60 for 44% protein test; $103.60 for 50% protein offerings.
Los Angeles: Demand steady; trend firmer; supply adequate; $85.60, up $7.
Ft. Worth: Demand good; trend higher; supply sufficient; 44% $81.50@83.50 April, $82.50@84.50 May, up $7.50; 50% $91.50@94.50 April, $92.50@95.50 May, up $9.50.
Atlanta: Demand good; trend stronger; supply limited; 44% $81.50, delivered.
Seattle: Demand fair; trend strong; supply ample; $91.70, delivered carlots.
Buffalo: Demand fair; trend higher; supply fair to poor; 44% soybean oil meal $73, Decatur, up $9.
Denver: Demand fair; trend steady; supply plentiful; $85.
Chicago: Demand very good; trend up $8@12; supply fair; Decatur basis 44% protein, unrestricted billing $75.50@77 and E.T.L. $73; 50% protein, unrestricted $84.50@86 and E.T.L. $82.
Minneapolis: Sharp advances in price since a week ago, mainly because of bullish bean market; 44% up $8 in week to $71.50, Decatur; 50% also up $8 to $77.50.

TANKAGE

Kansas City: Demand good; trend firm; supply tight; 60% digester $87.50@90, up $2.50.
Cincinnati: Demand good; trend stronger; supply short; 60% digester, Cincinnati, up $4.
Ft. Worth: Demand good; trend strong; supply scarce; 60% digester $90, sacked, Ft. Worth, $2.50 higher.
St. Paul: Demand good; supplies adequate; trend stronger; gain of $9@10 in week to $93@96, sacked.
Chicago: Demand and supply fair; trend unchanged; 60% protein $90, sacked.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.
Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged.
Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.
Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.
LaPlatte, Neb., and South Point, Ohio: Minimum 42% nitrogen, 262% protein equivalent, $100 ton, f.o.b. bagged; $96 ton, bulk, cars or trucks, freight equalized with nearest producing point.
Cincinnati: Minimum 42% nitrogen, 262% protein equivalent, carloads or truck loads $100 delivered, bagged; less than carloads or truck loads $110, f.o.b. agent's warehouse; bulk $4 less.

MISSISSIPPI

(Continued from page 6)

growing mash with 6 to 8% fiber. Some growers are using whole oats up to 50% of total feed intake, but, he added, they are possibly paying more for oats than a complete feed would cost. A limited feeding program of 8 to 22 weeks with high fiber might include rice and other hulls, but he cautioned against ultra high fiber content because it might bring stresses. The sources of fiber should be considered carefully and also the grind. They should be pulverized to a fine condition.

Lighting Effects

Dr. McClary was questioned considerably on the use of lights affecting maturity. He said lighting conditions had been instrumental in producing eggs 10% larger. The question of economics in holding pullets longer was brought from the floor and Dr. McClary said there is not a big difference.

"There seems to be a misconception on the part of some people that windowless houses are necessary to participate in light control production. This is not the case," he said.

Windowless houses have been in operation on the West Coast for eight years or more, with some of the first thorough tests being made in 1957. These houses have ventilation as well as controlled light, operating on a clock basis and a record of 80% lay has been attained as compared with 70% in natural light. Heavier birds have resulted and this has been maintained even to the time when the birds went to market.

The system is to reduce light to six hours daily during the growing stage, and when birds reach laying age, the light is increased 18 minutes daily at weekly intervals.

Step-Down and Step-Up

"The recommendation is to delay sexual maturity of pullets through a weekly step-down in the amount of light per day to 22 weeks of age. Then the procedure is reversed. There is a weekly step-up in amount of light per day to stimulate the pullets into production," he said.

This is a plan to step-down light during the growing period and step-up light during the laying period and this has resulted in delaying sexual maturity from two to three weeks, he said. Tests show a significant increase in rate of lay after about nine months of age and a reduction in laying house mortality.

Times are based on local conditions. Dr. McClary suggested that growers get the natural daylight in hours and minutes for the area in which pullets will reach 22 weeks of age. By adding seven hours, growers will be given the total number of hours and minutes that should be used to begin the program.

Sexual maturity is affected by change in day length and not by the absolute length of the day. A decreasing length will delay sexual maturity. There must be a sufficient length of light each day at the start of the program so that a regular reduction may continue through 21 to 22 weeks.

Results Summarized

This program, result-wise, may be summarized as follows:

1. A delay of sexual maturity of some 2 to 4 weeks.

2. A significant increase in rate of lay after three months of age.

3. An increase in egg size of approximately 1 oz. per dozen at 7 to 8 months of age, and ½ oz. per dozen advantage at 11 to 12 months.

4. Tendency toward fewer blood spots and thicker shells.

5. Some increase in body weight at 18 weeks.

6. Winter and spring hatches may receive as much as a dozen or more eggs per hen over natural light birds.

Under the plan he outlined there is no restricted feeding.

"Light control, in our opinion, will do a better job of delaying sexual maturity than a restricted feeding program," he said.

"We're trying to simulate perpetual spring time."

DEBEAKING DEMONSTRATIONS — Slides of debeaked birds were shown on the screen and then the actual bird was held up before the audience at Mississippi State University's recent poultry school. Here, E. W. Garrison, associate poultryman, holds a bird to show the debeaking process.

Scheduling Production

Since egg prices are highest between August and January, and lowest in May to July, offerings should be made accordingly and hatches planned that way, Dr. Wilhelm said. Best time to sell fowls is December to May and feed costs are lowest in September, October and November.

"Generally, we produce more eggs between January-June and sell them for less money than the annual averages. Just the reverse is true for the last six months, when we produce less and get more money for them. These have been long and recognized trends, but there are nine trends that have largely been ignored," he said.

Seasonal Trends

These trends, all seasonal, include the percentage of large eggs received at terminals; price differential between large and mediums; price differential 'between A's and B's; seasonal changes in leghorn fowl market; seasonal variation in pullet chick price; variations in cost of brooding; feed requirements for raising a pullet; feed requirements to feed a hen 13 months and feed ingredient prices.

He offered a table, based on several years research, indicating hens reach a peak production at eight months, with 1,910 dozen or a percentage of 78. From that time the trend is downward.

"Generally egg prices are above average from August through February. So it should be apparent that to make the most money you should sell the most eggs during this time. The spread between large and mediums says there is an advantage in having large eggs from August through January. If that differential were only 2¢ per dozen, at 60% lay, it means an extra 3¢ per month per hen. And I'd pick up at least 6¢ extra by having that 13th and 14th month of lay when there is the greatest differential," he said.

Spread between A and B is of shorter duration, June through October.

Production Costs

Brooding cost differences may be less than 2¢ between pullets housed in the summer and those housed in November, December and January, but that is, he said, 1/10¢ per dozen eggs.

A difference of 4 lb. of feed may be possible to house a pullet due entirely to seasonal temperature differences. At 3¢ lb. that is 12¢ per bird.

Feed consumed by the hen, subject to seasonal variation, can be as much as 10 lb., accountable by whether the hen laid through two winters or two summers. The normal seasonal changes in feed ingredient markets can possibly account for as much as 4¢ per pullet raised or 15¢ per

hen, depending on whether most of the feed was from the new crop without shrink and carrying charges.

Peak production at peak saleable markets is the goal, with careful eyes to the markets, he said.

Growers should keep records showing production peaks, ages, number of birds and plan replacements to start production at time of sell-offs and market peaks, he said.

Environment

Poultry production is becoming more scientific and the trend will be accelerated as findings are released from recently authorized laboratories at Mississippi State College and the University of Georgia. Engineering of shelter and ventilation has in the past been done largely by rule of thumb, said Hajine Ota, agricultural engineer, USDA, Beltsville, Md.

Most attention lately has been centered on stock, feed, drugs and to some extent management, he said, but studies are required to assess the engineering design data for evaporative coolers, ventilation of shelters at night in summer and critical nature of heat leakage from cracks in buildings. Attention should be paid to types of buildings, materials and how much heat they give off, he said.

Respiratory Disease Control

Newcastle can be controlled through vaccines most of the time, and mass vaccines will have greater future in pullets than in broilers. Ten days to two weeks is the minimum time they should be used, said Dr. D. W. Cummins, Dr. Salsbury's Laboratories, Atlanta, Ga.

The cost factor is less important on pullets than broilers.

PPLO is the major problem and this along with Newcastle, CRD, all lead to one thing—air sac infection.

People entering houses and hatcheries is a serious threat so far, and sound management is still the key to preventing spread of respiratory diseases.

Good Ventilation

"The most important factor of all is good ventilation. We're going to know a lot more about it during the next year or two," he said.

Removal of poultry-produced moisture is very important. During the winter it can't always be carried out, but ventilation should be adjusted so that heat from birds can account for this moisture. "Insulation is something everyone can do something about," he said.

You can take medicines, breeds, strains, houses and still the weakest thing in controlling parasites is you, Dr. S. A. Edgar, poultry pathologist, Auburn University, said.

Newcastle seems to be increasing in some areas of Mississippi and the most common parasites in the area are roundworms, flukes and tapeworms.

Clean litter and concrete floors produce essentially little trouble.

Nine kinds of coccidiosis are now known and birds are most susceptible at 4 to 6 weeks.

Whether a house has tapeworms depends to a great extent on how well birds are raised.

Cannibalism

A panel discussion on controlling cannibalism was part of the meeting.

Departing from usual panel procedures, actual demonstrations of debeaking were possible with chickens brought into the room. Hens were shown debeaked and actual demonstrations of debeaking methods employed were shown.

The best time to debeak, said Dr. E. W. Garrison, extension poultryman, is before needed. Ten weeks was noted as the best time. Human errors, said Fred Adams, Adams Enterprises, Mendenhall, Miss., are the biggest factor. One-eighth in. from nostril seems to be the best spot. There seems to be a joint there which produces a minimum of bleeding. This spot can be learned as the debeaking goes along, he said.

At least one service man should be present when work is done and this work should not be given to just anyone who happens along. Levoy Wilkerson, Garth Enterprises, Pelahatchie, also advised getting a trained crew for this work and keep it.

Important, too, is the physical condition of chickens. It should be remembered that birds will not be able to eat for four or five days. Feed should be kept from ¼ to ⅜ in. level so that chickens may eat enough feed. Specs have some effect on cannibalism and limited feed.

Posting—What to Look For

Take good stock of houses first thing in the morning. Upon finding trouble, don't wait a week before taking specimens to labs. Don't depend too much on self-analysis, but in 90% of time coccidiosis can be located when it is prevalent.

Dr. Edgar demonstrated with live birds a way to kill and open them up quickly for inspection.

When finding sick birds, don't just take them to labs, but include a few healthy ones and also, if possible, carry along a few dead ones. Don't depend just on a few specific specimens. Give lab technicians enough to work on, and take along some case histories, he said.

BROILERS

(Continued from page 1)

has not yet been reached. Most hatcheries are running at capacity.

This can only mean record broiler marketings, spokesmen said, and with competition increasing from other forms of meat, confusion may result.

"It isn't a matter of how low prices might or might not go," one committee member said. "The real problem will come in keeping broilers moving to market on schedule. This could be the critical problem."

That new houses are being built in nearly all areas was an accepted conclusion and most of it is not for replacement of old buildings, but consists of new ventures into the field.

Members attending the meeting also called for a renewed selling job by the industry itself to get more broilers consumed.

It was felt that even though the industry cuts back suddenly there will still remain a job of selling the public on buying more chicken meat.

Attendance

Those attending the meeting included: Ed Aubrey, Louisville, Ky.; Joe Garrison, Canton, Ga.; John Haid, Little Rock, Ark.; Emmett Hinton, Dalton, Ga.; Gus King, Athens, Ala.; Carl McDuffie, Raleigh, N.C.; Hal Murray, Macon, Ga.; Cecil Payne, Morton, Miss.; Joe Ray, Danville, Ark.; A. J. Smith, Trussville, Ala.; Bill Stone, Shelbyville, Tenn.; Lannis Thomas, Blackshear, Ga.; Lester Turner, Nashville, Tenn.; Dewey Walters, Columbia, Miss.; Paul Williams, Richmond, Va.; George Wright, Asheville, N.C.; Dennis Stringer, U.S. Department of Agriculture market news service; Harold Ford, Charles Edwards, Bob Hawkins and Gordon Sawyer of the Southeastern's office.

Controls Opposed

The committee, apparently sensing overproduction will bring talk of controls, unanimously voiced opposition to government controls of any kind. Most members of the group felt that the industry itself is capable of solving its own overproduction problems.

Health Problems

Renewed and accelerated efforts on health problems were asked for. Special emphasis was placed on respiratory diseases. The leukosis complex was also covered and the committee suggested that further field work is needed now if it is to be controlled.

Further discussions were in connection with government inspection, poultry health problems, executive development schools and special training for members of the industry as well as marketing reporting matters.

The committee's recommendations along these lines will be the basis of the association's activities during the next several months, Mr. Ford said.

Areas of Expansion

Significantly, it has been noted here that several southern states have shown tremendous strides in broiler production. And this trend toward increased production seems to be moving westward into Alabama and Mississippi.

Arkansas has been expanding rapidly, also. Only last week, Don Tyson, vice president, Tyson, Inc., Springdale, predicted that the state will become the leading broiler producer in the country.

The area around Cullman and Albertville, Ala., has undergone its largest expansions within the past year and a half. Alabama's hatchings were second only to Georgia's.

Gus King of Quaker Oats and Farm Industries of Alabama reported more broiler houses under construction in Alabama at present than ever before.

South Georgia is another area that is expanding at a rapid rate. Lannis Thomas, South Georgia Broilers, Blackshear, said reports reaching him indicate his area has a big expansion movement underway there. The southern portion of the state has only recently invaded the broiler field, possibly looking toward the retail trade in Florida.

Price Prediction

A prediction that unless production is curtailed broiler prices may drop as low as 13¢ late this summer or in the early fall was made by A. J. Smith of Smith's Pride, Trussville, Ala.

A more optimistic viewpoint was pointed out by Dewey Walters of Walters Poultry, Columbia, Miss., who, although concerned about overproduction, said it is possible the market may not be glutted after all. "Back in 1903 a similar situation existed, and predictions of saturated markets which never materialized," he noted.

Smith Johnson, Woodstock, Ga., chairman of the broiler commodity committee, said he believes large feed mills will bring about even more control of the broiler business, since they will have access to financing which the small grower will not have. More complete integration was forecast.

Hatchery men also were a bit concerned over the overproduction threat and several said they are planning to cut back. Cecil Payne, Payne's Hatchery, Morton, Miss., said he fears there will be no market for chicks if the bleak outlook materializes. Other hatcherymen reported they are unable to keep pace with the demand for chicks.

A shortage of incubators was reported in North Carolina.

Why the Boom?

Why all the booming broiler production?

The answer may be cotton, as one spokesman, a manufacturer of equipment, said.

Since farmers are no longer growing large cotton crops, they have plenty of land and time. So, they turn to chickens.

Poultry plants have been encouraged to move in, this equipment manufacturer said. A few years ago they might not have been encouraged by local banks and other civic leaders for the simple reason that they were afraid a shortage of cotton field workers might develop. The workers were needed in the fields to "chop" and pick cotton; not work in a poultry processing plant. Now that little cotton is being grown, due to acreage restrictions, the labor picture has changed.

EGG SET

(Continued from page 1)

above the same week of last year.

Broiler chick placements for the week ending April 8 totaled 45,440,000. This was 1% above the previous week and 31% above the corresponding week a year ago. Increases were reported for 12 states compared with the previous week. States showing appreciable increases include Georgia, Virginia, Mississippi and West Virginia.

Broiler prices in Delmarva have reflected the increase in production. Last week the average price paid per pound was 15.86¢. A week earlier the price averaged 16.70¢. For the same week of 1960 the price was 18.10¢.

NULAID

(Continued from page 1)

plan borrowers' notes are sold by the association to a syndicate of commercial banks with the association charging a small margin over its interest costs to the loan beneficiary. This plan now supports better than 30% of the total volume of the feed department, returns a margin to the association over the cost of its supervision and is operating today without delinquency or credit loss past or presently anticipated."

Egg Marketing

The firm's egg marketing activities showed a 3.07% decrease in case volume, the annual report pointed out. The egg department received 2,191,715 cases. The number of egg shipping members declined from 1,169 at the end of 1959 to 791 at the end of 1960, but the average size of delivery per member increased from 33⅓ to 47⅓ cases per week, the association stated. Nulaid reported that at the end of the year there were 247 members delivering 20,311 cases per week under the quality control program.

Nulaid notes that it undertook a fresh shell, hedged storage program in the spring of 1960 in an effort to stabilize producer prices during a period of heavy surplus. The association commented, "While the program undoubtedly had value in the spring, it tended to prove disastrous in the fall when out-of-storage prices failed to move with futures quotations. Our experience with this type of contract, together with changes in the national marketing systems, indicate that shell egg storage appears to have outlived its usefulness in our association, primarily because of the unacceptability of the storage product in the market place."

LAYERS

(Continued from page 1)

36.7¢ per dozen for eggs in mid-March, down 2.7¢ per dozen from a month earlier, but 4.4¢ a dozen higher than in mid-March, 1960. The nation's egg markets at the end of the month were sharply lower on all grades than at the beginning of the month, reports the USDA.

Eggs and Pullets of Laying Age, and Eggs Laid per 100 Layers on Farms, April 1

Year	North Atlantic	E. North Central	W. North Central	South Atlantic	South Central	Western	United States
Hens and Pullets of Laying Age on Farms (thousands)							
1950-59 (average)	53,011	61,064	89,167	32,230	49,939	35,345	320,757
1960	47,484	51,707	74,308	38,639	47,809	38,748	298,695
1961	45,820	48,296	69,880	40,054	46,790	41,319	292,157
Eggs Laid Per 100 Layers on Farms (number)							
1950-59 (average)	58.6	60.2	62.4	59.4	58.9	61.2	60.4
1960	59.0	59.9	62.1	60.2	58.0	64.2	60.6
1961	60.6	63.4	66.5	63.0	61.2	63.0	63.2

MISSOURI

(Continued from page 7)

supplied by either corn silage, corn cobs or mixtures of both.

Cattle fed silage made the fastest gains, 3.1 lb. per day; those fed cobs the slowest gain, 2.8 lb. per day, the report showed. Feed required per 100 lb. gain was similar for all rations. All cattle went on the high moisture corn rations rapidly. They were consuming 2½% of their body weight in air dry feed within 10 days.

EVALUATING MISSOURI FORAGES—Outlining research work to find a precise measure of the value of Missouri forage was Dr. W. H. Pfander.

Research on the value of dry forages has led to better balanced rations, Dr. Pfander noted. But, he said many of the older methods of analysis are no longer satisfactory. Improved testing methods and equipment have made it possible to learn more about forages and the animals' nutritional requirements, making many of the old measurements obsolete.

For example, he said, many of the evaluation procedures used in the past have ignored the fact that parts of the forage may be eaten while other parts are rejected by the animals and end up as bedding. This waste forage should not be included in the analysis of forage samples, he emphasized.

Chemical evaluation of the forage is not enough, Dr. Pfander said.

"Certainly the ability of the animal to digest the feed and the willingness of the animal to accept the feed should be included in the analysis," he continued. Many nutritionists now question the value of the total digestible nutrient or TDN system used by Morrison, he said.

The nutritionist used alfalfa and corn cobs to illustrate one difference in feed values. At current prices, the protein and minerals in a ton of alfalfa are worth about $21; in a ton of cobs, about $2. Of course, many of the minerals may be in excess of the amount needed in a ration and so would be wasted.

There is only a 10% difference in the energy value of the two feeds if evaluated by the traditional total digestible nutrients or digestible energy measurements, he said. However, a 25% difference may exist in net energy, a better measure of the energy value to the animal.

"Our current research program is designed to determine the digestible, metabolizable and net energy of 15 to 20 forages," Dr. Pfander said. "We will also measure more exactly what happens to these roughages in the rumen of experimental cattle and sheep.

"After these basic values are known, it becomes a matter of economics as to what feeds to use in various rations for maximum returns. By using the university computer, we hope to develop a series of formulae which can be used for selecting the most effective, economical ration for a specific purpose," Dr. Pfander concluded.

A LIQUID PROTEIN SUPPLEMENT VS. SOYBEAN MEAL FOR WINTERING CALVES AND FATTENING YEARLINGS—Dr. G. B. Thompson stated that soybean meal produced faster and more economical gains than a liquid supplement (Morea) when the two were compared in wintering rations and in finishing rations for beef steers. However, it was noted, the carcasses from steers fed the liquid supplement graded higher because of more marbling.

Steers weighed 600 lb. at the beginning of the wintering period. The winter ration fed in the 1959-60 winter consisted of corn silage and was supplemented with either soybean oil meal or liquid supplement, he said. Soybean meal was fed at the rate of 2 lb. per head per day and the liquid supplement was fed free choice. Amounts consumed daily of the latter averaged 3.4 lb. and ranged from 1-6 lb. Both lots consumed about 45 lb. of silage per head daily, Dr. Thompson said.

Soybean meal fed steers gained an average of 1.08 lb. per day. Morea fed steers gained .81 lb. or about one-fourth less than the soybean meal fed steers. Cattle were fed in muddy lots without shelter which reduced all gains, Dr. Thompson commented.

The fattening ration consisted of ground ear corn and either soybean meal or Morea. The soybean meal fed cattle gained 2.05 lb. daily, the liquid supplement—1.89 lb.

All cattle were slaughtered after 160 days on full feed. Cattle that received Morea produced carcasses that graded slightly over two-thirds of a grade higher than cattle that received soybean meal. Eight of the 12 steers fed the liquid supplement during the fattening period graded choice while only one of the 12 cattle fed soybean meal graded choice. This was due primarily to difference in marbling, Dr. Thompson noted.

The cattle fed soybean meal required 100 lb. less corn per 100 lb. gain than those fed the liquid supplement.

Although these differences were not staistically significant the superior marbling of steers fed the liquid supplement was impressive, Dr. Thompson said.

CREEP RATIONS FOR LAMBS—A FEED PREFERENCE STUDY—Dr. C. V. Ross told visitors at the event about a test with some 50 lambs to compare the palatability of several creep rations and the gains and feed efficiency of lambs eating them.

Dr. Ross said the test also aimed at determining the effect of the ewe's wintering ration upon the lamb's performance. Part of the lambs were from ewes wintered on silage and soybean meal and the others were from ewes wintered on silage and alfalfa hay.

The lambs were divided into two groups according to the way the ewes had been wintered. Part of each of these two groups are being fed shelled corn in the creep. The other lambs have their choice of two pelleted mixtures. One of these mixtures is made up of six parts corn, three parts soybean meal and one part bran. The other mixture contains one part alfalfa meal instead of the bran.

The creep test started Feb. 18 and will continue until June 15. To date, the lambs getting the mixed creep rations are eating about twice as much, gaining 12% faster and are in better condition than those on shelled corn, he said.

In earlier work, lambs on the mixture containing bran ate 2½ times as much feed and gained 20% faster than lambs fed shelled corn, he noted. The lambs on the mixture also had more bloom and graded higher at the end of the test.

"Even more important than the faster gains, these mixtures may help lambs reach choice grade when prices are highest in the spring," Dr. Ross said.

WINTER FEEDING FOR CARCASS QUALITY — PRELIMINARY RESULTS OF CURRENT TEST—Dr. R. L. Preston said that carcass quality is affected by the nutrient level of rations fed to cattle in the wintering period prior to finishing.

Feeder calves that were wintered well prior to finishing produced carcasses of higher grade and higher marbling and conformation scores than feeder calves wintered on less adequate rations, he said. An earlier study had indicated that "holding back" cattle during wintering might cause lower carcass quality after fattening.

Calves that weighed 475 lb. at the start were used. Two high-energy rations (9.5 lb. total digestible nutrients per day) were fed—one with high protein (1.6 lb. crude protein daily) and one with low protein level (1.0 lb. crude protein daily). Two low-energy rations (7 lb. total digestible nutrients) were fed—one with the high protein and one with the low protein levels described earlier.

During a wintering period of 145 days the cattle that received high-protein, high-energy rations gained an average of 1.9 lb. per day, the best for any group. The cattle on low-protein, low-energy ration gained only 1.3 lb. per day, the poorest for any group.

"The best gaining group required the least amount of T.D.N. per pound of gain," Dr. Preston said.

After wintering, all cattle were fed the same fattening ration consisting of ground ear corn, soybean meal and a small amount of hay, he noted. Cattle that made the best gains in winter, gained nearly as well as any other group during the fattening period. All cattle were slaughtered after a feeding period of 130 days.

The best carcasses were obtained from cattle that were wintered on a high-protein, high-energy ration, he said. These carcasses were high-good compared to low-good for cattle wintered on the low-enegry, low-protein ration even though both groups were fed to the same final weight.

The faster gaining groups had the highest dressing percentage and marbling and conformation scores. Their carcasses also had the largest rib-eye areas, Dr. Preston pointed out.

"It appears that the energy level during wintering had the greater effect on marbling while the protein level had more influence on the thickness of fat covering," Dr. Preston said. The researcher indicated there is a need for further work to determine the best ratio of protein and energy for producing the most desirable carcasses.

NUTRIENT CONTENT EFFECT ON RESPONSE OF CATTLE TO STILBESTROL—Dr. R. L. Preston told the persons at the Spring Livestock Day that nutrient content of the wintering ration has an effect on the response of cattle to stilbestrol. He commented that it also has a carryover effect on the stilbestrol response during the fattening period.

In a trial to determine the influence of the wintering ration upon carcass quality, half of the calves were implanted with 24 mg. of stilbestrol at the beginning of a 145 day wintering phase and then reimplanted with 36 mg. at the start of a 130 day fattening phase.

Increases in gain due to stilbestrol implants during the wintering phase amounted to 7% in those cattle fed the higher protein level (1.6 lb. crude protein per day), he said. Cattle fed a lower protein level (1.0 lb. crude protein per day) showed no response to stilbestrol.

When these cattle were all placed on the same fattening ration, cattle fed the higher level of protein during the wintering phase continued to show the greatest stimulation in gain due to stilbestrol implants—a 28% increase. Implanted cattle fed the lower level of protein during the wintering period showed a 12% increased gain response during fattening, Dr. Preston stated.

Carcass quality of the implanted cattle was not altered except that dressing percent was reduced 1.2%, he said.

"For the feeder who is going to use stilbestrol in a wintering ration, the use of adequate or higher amounts of protein is recommended because of the increased gain during the winter plus the carryover effect of winter protein level upon the stilbestrol response during the fattening period," Dr. Preston said.

"Calves which are wintered to gain 2 lb. or more per day usually experience a slow-up during spring and summer fattening. These results indicate that this can be overcome to a great extent through the use of stilbestrol and adequate protein intake," Dr. Preston concluded.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
February 4	1,161	402	878	641	98	921	2,040	2,380
February 11	1,133	524	897	707	106	855	2,070	2,400
February 18	1,185	395	949	765	122	816	2,013	2,220
February 25	1,191	390	956	743	102	767	1,939	2,427
March 4	1,184	414	710	819	99	843	2,115	2,076
March 11	1,170	404	908	777	130	722	2,092	2,046
March 18	1,229	468	928	854	80	749	2,138	2,186
March 25	1,242	434	861	893	101	842	2,172	2,427
April 1	1,214	494	815	891	125	823	2,274	2,562
April 8	1,263	548	868	967	104	850	2,124	2,632

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
February 4	1,040	375	3,659	345	6,783	270	3,672	2,724
February 11	1,199	369	3,834	426	7,211	260	4,032	3,020
February 18	1,195	462	4,099	422	7,521	238	4,188	2,979
February 25	1,026	529	3,984	412	7,655	223	4,404	3,085
March 4	973	465	3,895	480	7,668	227	4,649	2,860
March 11	1,238	510	4,008	404	7,681	259	4,737	2,952
March 18	1,327	600	4,112	449	7,739	279	4,954	2,958
March 25	1,465	649	4,304	433	8,441	257	4,951	3,288
April 1	1,340	649	4,442	476	8,747	291	4,921	3,294
April 8	1,477	753	4,398	553	8,981	262	4,875	3,426

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1961	Total 22 areas 1960
February 4	4,421	507	2,499	345	309	1,310	36,780	33,876
February 11	4,694	496	2,549	359	273	1,293	38,707	34,497
February 18	4,711	501	2,760	373	253	1,377	39,544	34,392
February 25	4,827	556	2,707	352	264	1,426	39,965	34,604
March 4	4,664	508	2,816	413	305	1,486	39,669	34,954
March 11	4,621	608	2,860	350	356	1,473	40,305	35,168
March 18	4,926	620	2,950	358	260	1,533	41,697	35,468
March 25	5,269	600	3,087	401	352	1,475	43,944	35,637
April 1	5,499	658	3,274	367	250	1,443	44,871	34,870
April 8	5,448	598	3,280	363	248	1,422	45,440	34,708

Cincinnati Feed Club Plans River Cruise

CINCINNATI, OHIO—A large attendance is expected at the annual election of officers meeting of the Cincinnati Feed Club April 24, attracted by an evening cruise on the Ohio River on the Johnson party boat. Members report a large number of out-of-town guest inquiries concerning this event.

Officials of the club state that all guests are welcome. They request that reservations be sent in by April 21, addressing them to Lucian Garner, Quaker Oats Co., Lawrenceburg, Ind., or Harley Aylor, John F. Young Co., 3270 Southside, Cincinnati 4, Ohio. Mr. Garner and Mr. Aylor will handle cruise tickets and make hotel reservations for out-of-town guests who desire to stay over.

The party boat leaves at 6 p.m. and will return to dock about 10:30 p.m.

Sells Molasses Interest

CINCINNATI, OHIO — John F. Young, president of the John F. Young Co., feed ingredient broker, recently sold his interest in the Riverside Molasses Co. for an unannounced price to the Knappen Milling Co. of Augusta, Mich. Ronald Lindsey, manager of the local plant of Riverside Molasses Co., continues in the same capacity.

MARKETS

(Continued from page 2)

substantial savings realized when comparing price, on a basis per unit of protein, between fish meal and soybean meal.

Within another month many mills anticipate a sizeable increase in turkey feed business although in some areas a noticeable increase in this demand has already been reported. Turkey ranchers are worried about the fall market as overproduction is a constant threat.

Poultrymen and turkey growers in this section are concerned with the new government grain program increasing the government loan prices, but not mentioning any guarantees for their respective markets.

Dairymen report a slight increase in feed tonnage this year compared to last year. This business is rather constant throughout the year and no change is anticipated.

Feedlots in this territory are gradually increasing cattle stocks although recent prices have not reflected a heavy beef demand. Most cattlemen are optimistic and hopeful for rapid improvement in this market.

Southwest

The general tone of feed business in the Southwest is better this week with mills experiencing five-day runs and occasional reports of mills finding demand sufficiently brisk to run the sixth day.

All lines of feed except cattle feeds were showing seasonal improvement with the various lines of swine feeds moving well in most areas. Some mills had promotions going on pig feed which were well received. Mills which are participating in turkey operations are finding this business picking up and the volume in this line should continue to show steady improvement into heavy feeding.

The weather has been wet over most of the Southwest and it is felt that the coming of warmer weather will provide a stimulus to feed business.

Price lists will be slightly higher this week due to exceptional increases in protein meals.

Mountain States

Feed business in the Mountain states started to pick up appreciably in the past week, especially on poultry. Cattle feeding is still somewhat below the usual pattern for this time of year due to lower prices. Other feeding remains normal and feed prices are steady to higher.

Ohio Valley

Unseasonably low temperatures during the last week, which made under-cover feeding of hogs and poultry necessary in many Ohio Valley areas, created a substantially increased demand for commercially mixed feeds for these animals. However, the demand for cattle feeds remained virtually static because of the steadily increasing availability of spring pasturage.

Especially pleasing to area manufacturers was the quite sharp pickup in demand for chick starters, and the beginning of the seasonal movement of turkey feeds—although the latter is not yet in sufficient tonnage to require any appreciable increase in production schedules.

But the continuing steady to strong retail movement of eggs and poultry of all types is reported to be encouraging farmers and commercial hatcheries to increase egg settings in the belief that the steadily improving economic situation will insure profitable markets for eggs and poultry during coming months.

Pacific Northwest

Oregon and Washington formula feed sales this week were fairly maintained with the big volume movement still devoted to broiler, poult and egg mashes. Continued good spring pasturage has restricted supplemental feeding of dairy and beef cattle herds.

The area's alfalfa hay market was quiet with prices barely unchanged for the week. Scattered trading throughout the area reflected limited purchases by dairy and other livestock feeders for fill-in purposes and usage of alfalfa hay was greatly curtailed by the availability of good green feed.

The feed ratio with poultry and dairy products continued on the unfavorable side. Producer-paying prices for eggs held unchanged at Portland and Seattle but the live lamb market broke again for the third consecutive week with choice grade heavy old crop lambs selling as low as 14¢ lb. on the hoof at North Portland Monday. Only some 250 spring lambs have been marketed at North Portland this season and prices for choice and prime grades were generally within a range of $21-$21.50 cwt.

Central Soya Dividend

FT. WAYNE, IND.—The directors of Central Soya, Ft. Wayne, Ind., have declared a quarterly cash dividend of 27½¢ per share on the capital stock of the company, payable May 15, 1961, to stockholders of record at the close of business April 28, 1961, according to Harold W. McMillen, chairman of the board.

This is the third quarterly cash dividend of the current fiscal year and continues the company's 19-year record of uninterrupted cash dividends.

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BECAUSE OF MORE EXTENSIVE competition from truck transportation, railroads are stepping up customer service programs. One of these, according to Robert C. Haldeman, U.S. Department of Agriculture transportation economist, is the provision of "price knowledgability" service to country grain elevators. They maintain daily market price information together with rail rate information into the markets they serve. This information is made available to the country elevator operator, enabling him to compute rapidly the prices available to him in the several markets. In some cases, Mr. Haldeman says, the railroad assists in bringing buyer and seller together. And as part of the service, the railroad guarantees the availability of satisfactory cars for loading, spots cars in such a way that they can be furnished on short notice, and guarantees delivery time to the buyer.

WHILE BROILER CONSUMPTION has increased greatly, sometimes we may forget just how relatively fast the consumer has stepped up purchase and use of broilers. Just 20 years ago, the average American ate only 1.97 lb. of broiler annually. Ten years ago, per capita consumption stood at 8.65 lb. a year, but now it stands at some 23.65 lb.

THE CONTINUING DEVELOPMENTS in agribusiness are a reminder that more universities probably could be taking more steps to coordinate both education and research efforts among various departments. To be sure, some of this has been done, but it looks as though the public which the universities serve would be better served if there were more coordination.

Agricultural engineering, business administration, agricultural economics, veterinary medicine and extension, as well as animal, dairy and poultry husbandry—all are involved in modern agribusiness as reflected in much of the feed industry and related industries. It would seem that these industries and agriculture in general would benefit considerably if each of these departments were more aware of what the others were doing and if they could work jointly on many problems and projects. Perhaps feed people could stimulate more thinking along these lines if they were to initiate more contacts with departments other than just those concerned with animal science.

+++

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